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SERVICE BULLETIN
CONTENTS CONFIDENTIAL

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VOL. XX NO. 1 WASHINGTON, D. C. JANUARY 6, 1936

WHAT'S AHEAD IN FIRE CONTROL

By Roy Headley, Washington

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SERVICE BULLETIN

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> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.
>
> Theodore Roosevelt

VOL. XX NO.1 WASHINGTON, D. C. JANUARY 6, 1936.

WHAT'S AHEAD IN FIRE CONTROL

By Roy Headley, Washington

Protection on the National Forests has gone so far that the Forest Service now has to worry about only ten or a dozen fires a year.

This extreme statement is one way of expressing the fact that revolutionary changes have occurred in the practical aspect of the National Forest fire problem. Fifteen years ago the construction of the present system of organized fire control was pretty much in the blueprint stage. In one sense we had to worry about every one of the 6,000 fires we were then having annually. Today, the modern fire control machine is in regular operation. Although the number of fires to be handled annually has been allowed to grow to 9,000 or more, we "get" all of them except ten or a dozen and get them pretty much as a matter of reliable routine even in bad years.

If you won't take me too literally, then, it can be said that our job now is to master the ten or a dozen fires which annually get away and produce the great bulk of our damage and suppression costs.

If at the beginning of each season, we could run through the list of the 9,000 fires we are going to have to handle and put our finger on the ten which are going to get away, our job would be simple - too simple to be interesting perhaps. We would drown every one of the ten, before it even started, with prevention, preparedness, presuppression and suppression. But there is no such easy way out. Almost any ten fires out of at least half the season's crop, may prove to be the ones which develop into the ten big ones for the year.

After all, then, in order to get our ten big fires before they get big, we have to worry about pretty much the whole crop for the season. We have to give each individual one, of at least half the crop, a special treatment designed to deal with the often remote chance that that particular fire may become one of the ten big ones for the year.

The key question inspectors will ask when reviewing plans for the coming season will be "Have you done, and are you prepared to do day by day during the season, everything humanly possible to insure that no big fire will enter into the history of your territory?" Many books could be filled with the analyzing and synthesizing which should follow that innocent question.

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If we take a look at the history of National Forest fire control and the facilities now available, we have a right to expect notable performance in future. By half decades, we have brought our average annual percent of area lost down from its high of .72 of one percent in 1910-14 to .21 of one percent in 1930-34. We now have to our credit two years (1930 and 1933) in which we have held our area losses below our former goal of .1 of one percent. Considering the nature of the season, 1935 is a bit disappointing. From area burned reports to the date this is written, it looks like our loss will be slightly over .1 of one percent. New units in Eastern Regions have not had time to reform local woods burning habits. But even in the Western Regions the area lost in 1935 is greater than in 1930, although less than in 1933. Much of the 1935 trouble was with what may be called freak fires -- freakish at least to the extent that they occurred on Forests where our losses are normally negligible. But the 1935 record is a pretty good one after all, even if it is an easy one to beat in future.

It is not unreasonable to expect that we should pull our average annual loss in area from .21 of one percent down to .14 of one percent (1.4 acres per 1000) even if we continue to draw one or two bad seasons per half decade. If the climate should decide to surprise us with a half decade without a single bad year, we ought to pull our losses down to an average of .07 of one percent (.7 acre per 1000). It is even permitted to hope that in the next five or ten years we may finally get somewhere with the baffling job of fire prevention. It will not be an easy game to reach these objectives, but a review of the pertinent facts in the case indicates that with reasonable team work they are really attainable.

A PLEA FOR LOCAL COLOR

By T. J. Mosley, Forest Products Laboratory

There is something so disturbing to a rudimentary esthetic sense in the agitation about "Naming the National Forests" opened up in the November 11 issue of the Service Bulletin that one can only hope nothing further will come of it. Surely, with all due respect to both our Presidents Harrison, the U. S. geography is already carrying its full load of personal nomenclature without need of making a biographical dictionary out of the National Forests!

Naming a country and its topography after more or less prominent humans in the latest wave of man's invasion seems, in all but exceptional cases, to beg the question of place nomenclature entirely. It violates Nature. It is a case of "having eyes they see not, having ears they hear not." It denies to succeeding generations a sense of background in their environment. It is the mark, in short, of the stranger and the despoiler in the land -- the stripe that is branded broad across America -- the trademark of our exploitative era.

Suppose the above is all bunk. Suppose no odor of exploitation whatever attaches to our national habit of naming the mountain for Jones and the town for Smith. Suppose, instead, that it is our way of paying our highest compliments to the land and honors to our personnel.

In neither case is the method appropriate.

The highest memorial to our heroes lies in the permanency of their institutions, the gratitude which attaches to their name in the hearts of those who follow them, the record of their deeds on the page of history. Supplementing their fame, it is by all means fitting that men should lavish money and talent on works of art in marble or bronze to commemorate them. So long as those works endure or there is will to renew them, let them be built and maintained. But simply to nail up a ticket stating that this is Robinson's Crater or the River Jenkins seems a too quick and easy way to get out of building a monument to the honoree.

As far as the land itself is concerned, the method in too many cases amounts to mere vandalism. It robs the topography of any significance in itself, it ruthlessly sunders all ties of imagination and sympathy pertaining to the country and whatever history and distinctive marks it has. Now, doubtless, when confronted with a thousand square miles or so of featureless and helpless prairie to be organized into a county, the settling fathers would almost be driven to dub it Clay or Adams or Hancock and be done with it, in order to give themselves a local habitation and a name, without waiting 50 years for a Carnegie Library to tell them that the Indians called that particular terrain "Land of Whispering Waters." --But, despite all that, the state of county nomenclature throughout the land today must in all fairness be considered a poor show, suggesting that the pioneers must have been in a terrible hurry to get to plowing. The county directory of most States seems, by and large, to lack not only euphony (and that's something) but local meaning and historical significance as well. If the name Cumberland is over-used, as it may be, what shall be said of that long list of county names of Presidents and Senators, generals and lesser lights, from Jefferson to Tom Green, that can be matched practically word for word in every State of the Union? Doesn't the attribution tend to become somewhat colorless and unsatisfactory?

The same applies, by and large, to too many thousands of towns and villages, named that way perhaps for lack of time, certainly with glaring lack of imagination. And no disrespect to our Nation's great and near-great should be imputed to the writer herein, because none is intended. This is simply a plea for keeping biography and geography unscrambled. Moreover, I hereby fully agree that the biggest river, State, city, National Forest, and so on, in the country should be named for Washington, the next biggest for Lincoln, and the third for the man of your choice; but, for the land's sake, let the process stop somewhere - that's all I mean.

The best place-names grow naturally, like the trees, and engrave themselves like the rivers. The next best are those that are conferred at some time, not from a distance, but by those who are seasoned to the land and, perchance, love it. On both accounts it might be maintained that America is poverty-stricken in place-names in comparison with older countries. But some successful place-names do exist here. Much fun has been had about the name of Smackover, Arkansas, for instance; but, other things being equal, I had rather sign my name from that address than from Adamsburg, Lincoln County, Washington, and I will tell you why. The name Smackover is a "natural." It contains a lot of color and history, as well as a bit of phonetics. The place was named, presumably, by French woodsmen; not for Lasalle, Lafayette, or the _Roi Soleil_, but simply as _Chemin Couvert_, the "hidden" or "secret" road. Carries one back quite a ways, to adventure, and Nature, and things. Then came the attrition of a different people and a different speech on those two French words, and the historical result today is Smackover--just as American as Twickenham is English, and just as genuine. The French seem to have had the "feel" of the country pretty well, and as for the Indian names, they are the country itself. No matter if a foreigner can't get the meaning of Kitsack, Mo., or Oconomowoc, Wis., at first sight; proper names are that way--individual, distinctive.

To return to the National Forest question, then: Possessing some qualifications for thought and a taste for Nature, and not being in too great a hurry to "develop the country," the Forest Service is perhaps better fitted than an over-night real estate company to give the best possible names to its holdings, and to consult with the several States in that regard. May the day be long in coming ere we seriously advise changing the name of a crane-haunted solitude in South Carolina from Enoree to Higginbotham, or recommend renaming the Everglades or the great Okefenokee swamp in favor of Who's Who.

After all, Scawfell and Winandermere remain inspiring actualities in their own right today, in an old land where whole races of men have lived their lives and individuals have been remembered or forgotten according to their merits; and I think one would have the sanction of Wordsworth himself in wishing our National Forests, generally, associated in name --

> "Not with the mean and paltry works of man,
> But with high objects, with enduring things --
> With Life, and Nature."

A NEW FORM OF COOPERATION

By M. R. Scott, Washington

In past years the Service has cooperated in many ways with various colleges in the interest of education in forestry.

We have contributed all manner and kind of technical findings and procedure. We have extended employment to forestry students during school vacation periods. Yes, we have even employed some forestry professors on seasonal work.

All this has directly or indirectly, we hope, contributed to the general advancement of Forestry. In some cases maybe it has materially helped the student who later became the possessor of the Service title "Junior Forester".

Shortly after the inception of our present cost accounting system requests for information and literature began to arrive from students desiring to qualify as experts on forest financial problems through submission of theses. Our cost system was more recently carefully reviewed by an Eastern college professor who was engaged in writing a book on the subject of Government Finance.

The latest activity of record resulted from a request which originated at the University of Maine. A professor at that institution apparently has decided he may as well teach the subject regarding which his students have been submitting theses without instruction, namely, Forest Service Cost Accounting. After reviewing samples furnished at his request he has asked for many additional copies of manual instructions and forms with special emphasis on Nursery Cost Accounting, stating that he desires them for use in classroom instruction. It remains to be seen what other forestry schools will follow suit.

Forest Supervisors and Executive Assistants should take courage; the time may yet come when new appointees will be versed in the intricacies of cost accounting.

TANKS! MISTER, or A NEW CAUSE OF PLANTATION MORTALITY

By Paul O. Rudolf, Lake States For. Expt. Sta.

During the past summer (1935), the Lake States Forest Experiment Station carried out in Wisconsin a resurvey of older plantations which had been examined during the first regionwide plantation survey in the Lake States in 1924. In the course of this work there arose many incidents not strictly provided for in the working plan. Some of these were quite unusual and not lacking in humorous implication.

One group of plantations was located on the Military Reservation near Sparta, Wisconsin. The examining crew was struck first of all by the sparseness and patchy nature of survival. Later in the day, as they were deeply engrossed in their work and still somewhat puzzled as to the causes of the heavy losses, they were suddenly startled by a rumbling, rending din. To their amazement they found themselves surrounded by an army of light tanks, field artillery, cavalry and infantry, the whole progressing regardless of natural obstacles. After a momentary pause the military machine continued on its way, apparently considering three unarmed and peacefully-minded foresters as foes scarcely worthy of its metal. The tanks made their way roughshod over any impeding vegetation, either breaking it off or skinning it severely, but an occasional, unusually sturdy oak defied their efforts and caused them to turn aside. Thus there was dramatically revealed to the men the principal cause of the heavy mortality and the reasons for survival in the shelter of larger oaks.

A feature of interest attached to these plantations is that they were established in 1912 under the supervision of the Forest Service, the planting assistant from the Michigan (now Huron) National Forest directing the work. Although 25 acres of Norway pine, 25 acres of Scotch pine, and 16 acres of jack pine (purchased as Norway pine) were planted, only occasional scattered trees now remain to attest to this effort.

RECREATION VALUES

By F. V. Horton, R. 6

The Eel Creek Forest Camp on the Oregon Coast Highway, Siuslaw National Forest, was constructed with CCC labor at a total cost of $3,130. This item includes material, transportation, equipment charges, and the CCC labor at $1.50 a day. The administrative cost, including the administrative guard's salary and supervision by the District Ranger, has been to date $236.50. The cost of repair to the campground as a result of a season's use was $85. Therefore, the total cost of this camp ground to date is $3,451.50.

The use since construction has included 700 overnight camping parties and 11,900 picnickers. If we take the going commercial rate of 50¢ per overnight camping party and 25¢ per picnicker, we find that the total value to the public has been $3,325; or, the value of the camp ground not written off by one season's use is $126.50.

We believe that the above is rather average for the improved camp grounds on main travel routes. Another example on the same Oregon Coast Highway shows that the total cost is $4,711; the value assigned to the season of 1935 is $3,437; leaving a value not written off by one season's use of $1,274. The latter example is of an unfinished forest camp where a bridge was built to provide an expanded overnight camping area, and while the bridge was completed, it was not possible to develop the camping area; consequently, the bridge itself did not add anything to the value of the camp ground this year.

YE EDITOR DISCOVERS

A half day during the recent Regional Foresters conference was spent in listening to a presentation by Robert Marshall of the aims and objectives of the Wilderness Society, of which he is a member, and to a discussion of his proposals. Probably the most surprising part of this statement was Marshall's contention that he did not advocate totally restricted Wilderness Areas as a general rule, but that he realized some grazing and timber cutting were practical considerations which must be recognized and tolerated on many of the Wilderness Areas in the Far West. His major plea called for complete closure of these areas to all "mechanized methods of transportation" except that the use of airplanes would be permitted for bringing in fire fighters and fire-fighting equipment. Mr. Marshall submitted a list of 21 areas which he feels should be established as Wilderness Areas in the West, of which all but a half dozen are already so recognized, at least in part, by the Forest Service. Mr. Marshall further recommends extending the boundaries of many of the present recognized Wilderness Areas and for all of them he recommends that mechanized transportation be forbidden.

Before leaving Washington the Regional Foresters having supervision over the Wilderness Areas met with Mr. Marshall and obtained the recommendations of his Society regarding them. Mr. Marshall's statement was not as radical or as extreme as was expected by the majority of the Regional Foresters, based upon the generalized statement heretofore issued by the Wilderness Society, and if the Society as a whole supports Marshall's expressed viewpoint it is expected that the subject which was on its way to becoming a major issue among conservationists can be worked out in a manner reasonably satisfactory to the majority of foresters and Wilderness Area enthusiasts. A digest of the transcript of Marshall's statement, together with comments made during the meeting by Ovid Butler, Executive Secretary of the American Forestry Association, Mr. Silcox, Mr. Kneipp, and others is included in the report of the Regional Foresters conference.

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Funds totalling $1,107,000 have been allotted by the Works Progress Administration for the carrying on of work in the National Forests by men in transient camps. It is expected that this amount will provide for 86 such camps averaging about 200 men each. The duration of the transient camp program is 4 months from December 1, 1935 to March 31, 1936. Work will be on the basis of five 6-hour days per week.

The camps are to be handled very similarly to the cooperative relationship which exists between the Army and the Forest Service in conducting the CCC camps; the WPA will take care of the housekeeping part of the job and the Forest Service will provide the technical supervision and take care of the purchase of materials and supplies.

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Fellowships in the biological sciences (zoology, botany, anthropology and psychology, agriculture and forestry) are being offered again this year by the National Research Council. These fellowships are for study and research in America or abroad, and are open to citizens of both sexes of the United States and Canada who possess a Ph. D. degree or its equivalent. The present policy of the Board of Administration is to restrict appointment to those applicants in the early stages of a research career who have demonstrated a high order of ability and who give promise of developing individual judgments and viewpoints in investigative work.

The basic stipends awarded per annum are $1,620 for unmarried Fellows and $2,070 for married Fellows in America or $1,620 and $2,160, respectively, with additional travel allowance for Fellows appointed to study in Europe. Awards are made for one year, but fellowships may be renewed. Applications must be in the hands of the Fellowship Board not later than February 1, 1936. Appointments will be made about the first of April.

The Board prescribes that applicants for fellowships shall be nominated by responsible scientists. It will not consider applications which have not been endorsed by a suitable nominator.

Further information concerning these fellowships may be obtained from the Chairman, Board of National Research Fellowships in the Biological Sciences, National Research Council, Washington, D. C.

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The Works Progress Administration recently approved the allotment of $246,893 for recreational development at timber line on Mount Hood, Mount Hood National Forest, Oregon, including housing accommodations, roads, trails, landscaping, parking spaces, swimming tanks, toboggan and ski runs, ski jumps, tennis courts, water system, open amphitheatre, barns, shelters, etc. Plans include a hotel of stone and wood covering 10,200 square feet. It will be a year-round recreational center and is an excellent example of how the Forest Service is developing recreational facilities on the National Forests for the benefit of the public.

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Approval by the Works Progress Administration of allotment of $749,994 for the construction of a 250-foot high concrete arch dam in Sabino Canyon, Coronado National Forest, Arizona, to provide a mountain lake for such recreational activities as boating, fishing, bathing and for flood control and water conservation is another example of recreational development on the National Forests. This project was sponsored by the Board of Supervisors of Pima County, Arizona, to which a special use permit for the construction of the dam has been issued by the Forest Service. The permit provides that construction work shall begin within two years and be completed within five years.

MR. BABB BUYS A TOWN

There is a bit of humor and some tragedy and room for much diverting daydreaming in the news that R. A. Babb of Eugene has purchased an entire town.

Most of us are romantic enough to cherish a longing to direct some big and showy enterprise, a great manufacturing system, a city, a newspaper, a country. We are sure that, if given our way, we could become benevolent despots, directing the lives and fortunes of hundreds of people in the manner best suited to their long-time interests. It is significant of the slow progress of true democracy that we always so envision ourselves as sole directors of these ventures--to share the glory and responsibility does not appeal.

And here is a Eugene man who has purchased Mill City, a little Liechtenstein right here in western Oregon.

Stores, railroad depot, postoffice, 32 dwellings, a theater and club, a sawmill, planing mill and 280 acres of land are included in the purchase. Most of the residences are good, substantial and well-kept places, snug homes of mill-workers who planned to make the little town their permanent home. Mill City is on a Southern Pacific branch in Linn and Marion counties, and extends along the Santiam river. It sounds like a perfect set-up for a model community.

And it still may be.

Right now Mill City is feeling a bit low. The Hammond Lumber company, which sold to Mr. Babb, had operated the mill there for many years. Most of its employes had held their positions for a long time. They felt secure enough to yearn for nice homes instead of the shacks so often encountered in temporary mill communities, and so they built them. Through most of the depression the mill continued to run. Then A. B. Hammond died, inheritance taxes and other expenses nibbled at the estate, and some of the smaller holdings were liquidated. Mill City was among them. Over night the appalled residents found themselves jobless, their property nearly valueless. Many of them had worked there so many years it would be difficult to get work elsewhere. It was a truly discouraging situation.

Mill City did not fold up entirely. The planing mill continued running to finish lumber already sawed. The theater operator and several store owners have asked to continue in their present locations.

There is really no reason why Mill City should become a ghost town, its few remaining inhabitants moving about in the drear loneliness of deserted buildings and gaping foundations.

Mill City is ideally located as a millsite. According to an economic survey made by the Forest Service seven billion board feet of timber should be removed by way of the little town. If this lumbering is done in a systematic fashion, following the sustained yield plan advocated by the Service, it would mean enough business to keep the milltown bustling contentedly for an indefinite period of time.

Who could ask a better little kingdom? A nice town, located on the Santiam river, the North Santiam highway and the railroad. A means of livelihood, not for a metropolis but for the 1200 persons of the community. Mr. Babb forebore purchase of the town bank and the light and water plant. Some will opine that he showed rare judgment in this. After all, one must share a few things.

Mill City has had a scare which should emphasize again that a systematic plan for timber growth and cutting must be followed, if the lumber industry of Oregon is to be made a substantial, long-time business, and its dependents responsible citizens instead of discouraged camp followers.

At the next session of congress, President Roosevelt plans to ask for a definite program on forest conservation. In anticipation of this, the Oregon and California land grant counties are preparing briefs on their claims and interests. No doubt there will be some wrangling of opposing interest, and some bitterness may result. But county courts, private timber owners, national foresters and other Government officials are agreed that some definite plan, which will not rob any of them and at the same time give them some assurance of what to expect in coming years, is greatly to be desired. - From the News, Eugene, Oregon

STATION KBAA HEARD IN KENTUCKY

The following is quoted from a memorandum written by the radio technician on the Cumberland National Forest in Kentucky and is an interesting comment on the ultra high frequency signals from the Radio Laboratory in Portland, Oregon (KBAA). The UHF transmitter at KBAA has a carrier power of less than five watts.

"I happened to be at the Indian Trail tower Saturday afternoon for the purpose of inspecting the F-11 London telephone line and the antenna installation on the tower. While checking the radio set I noticed a station just below our 32.14 mc. channel * * * I therefore listened to the station from about 3:00 p.m. to 3:30 p.m. C.S.T. when the announcement was made that the station was KBAA, the experimental station of the U.S. Forest Service at Portland, Oregon"

"The signals were heard on set TH 38 which is installed in the Indian Trail lookout tower. Slow fading was noticed, the signal varying in strength from about R6 to R2. The signal strength would be quite good for periods of 3 to 5 minutes and then drop for periods of 15 to 60 seconds. Of course small variations in signal due to fading would not have been noticed because of the automatic-volume-control action of the receiver. The low signal periods were comparatively short however, and the signals were readable about 95 percent of the time during which I listened (3:00 to 3:30 p.m. C.S.T.)"

COOLIDGE DAM EROSION

Reports from the irrigation project under the Coolidge Dam in Arizona indicate that the reservoir behind the dam may be filled with silt carried by the Gila River from the plains in its watershed. "The river is washing away almost 1,000 acres of farm land a year," Chief Engineer F. H. Knapp is reported as saying. "So great is the erosion that some of the smaller reservoirs are being filled in a single year with as much dirt as could be excavated from a canal 50 feet wide, 6 feet deep and 220 miles long," another engineer said. Left to itself, the huge Coolidge reservoir would be ruined, with the result that 10,000 would be left homeless and six homes would become deserted. - New York Times.

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>
> Theodore Roosevelt

Vol. XX No.2 Washington, D. C. January 20, 1936

CHIEF FORESTER HEADS INTERNATIONAL WILDLIFE CONFERENCE

The North American Wildlife Conference, called by President Roosevelt, will meet in Washington, D.C., from February 3 to 7; Mr. Silcox was named as Chairman by the President. Delegates from wildlife and conservation clubs, societies and groups, and from various States, plus ten representatives each from Canada and Mexico, are due to attend.

Mr. Roosevelt, in his letter to Mr. Silcox, expressed the hope that, through the Conference, "will come constructive proposals for concrete action; that through these proposals, existing State and Federal governmental agencies and conservation groups can work cooperatively for the common good."

Here are the three major objectives before the North American Wildlife Conference, according to Mr. Silcox:

"First, the organization of a permanent national federation of all agencies, societies, individuals and clubs interested in the restoration and conservation of wildlife resources with the avowed purpose of securing adequate recognition and support by Governmental agencies. Second, the development of a National Program for the advancement of wildlife restoration and conservation. Third, the presentation of such facts, discoveries, and information pertinent to wildlife as may contribute to the solution of our mutual problems."

It will be up to the Conference to decide upon its own future. Open forum discussion will enable the views of all delegates to be discussed and analyzed and fused into a workable policy toward wildlife restoration. Every medium possible will be pressed into use to dramatically display to the public the need for wildlife restoration and conservation. This will include exhibits, speeches, photo displays and public motion pictures. There'll even be an aquarium installed in one corner of the Mayflower Hotel, where the Conference will take place.

The Citizens Committee for the North American Wildlife Conference, appointed by the President, held its first meeting on January 3, when a definite program was drawn up for the forthcoming international meeting. The program called for discussions of the crises in the wildlife situation, the place of education in wildlife restoration, cooperation between federal, state and local agencies and private organizations and kindred subjects. The Citizens Committee, which met under the chairmanship of Chief Forester Silcox, is composed of the following members:

Secretaries Ickes, Wallace, and Roper, members ex-officio.

Elliott S. Barker, President, International Association of Game, Fish and Conservation Commissioners, Santa Fe, New Mexico.

Frank T. Bell, United States Commissioner of Fisheries; President, American Fisheries Society.

Arno B. Cammerer, Director, National Park Service.

Charles E. Clarke, Jr., Chairman, Conservation Committee, United States Junior Chamber of Commerce, Jacksonville, Florida.

Powel Crosley, Jr., President, Crosley Radio Corporation, Cincinnati; Chairman of the Executive Committee, American Wildlife Institute.

Jay N. Darling, former Chief of the United States Bureau of Biological Survey, Des Moines, Iowa.

William L. Finley, member, Migratory Bird Advisory Board, Portland, Oregon.

Ira N. Gabrielson, Chief, United States Bureau of Biological Survey.

Colonel H. S. Graves, President, American Forestry Association, New Haven, Conn.

Dr. John A. Hartwell, More Game Birds in America, Inc., New York, N. Y.

J. K. Kinnear, President, Associated Fishing Tackle Manufacturers, Geneva, Ohio.

Mrs. Robert Campbell Lawson, President, General Federation of Women's Clubs, Tulsa, Oklahoma.

Nathan Moran, sportsman-conservationist, member, Migratory Bird Advisory Board, San Francisco, California.

Frank E. Mullen, Chairman, Radio Conservation Council, New York City, N. Y.

Edward A. O'Neal, President, American Farm Bureau Federation, Birmingham, Alabama.

I. T. Quinn, Chairman, National Committee on Wildlife Legislation, Montgomery, Alabama.

Kermit Roosevelt, President, National Association of Audubon Societies, New York City, N. Y.

L. J. Taber, President, National Grange, Columbus, Ohio.

C. A. Wheatley, member executive board, Izaak Walton League; trustee, American Wildlife Institute, San Antonio, Texas.

Judge George W. Wood, President, Izaak Walton League of America, Waterloo, Iowa.

UNUSUAL THUNDERSTORM ACTIVITY IN THE MOUNTAINS OF OREGON AND WASHINGTON IN 1935

By William G. Morris, Pacific Northwest For. Expt. Sta.

Thunderstorm frequency in the Oregon Cascade Range and northeastern part of the State was greater in 1935 than in any year since 1930. The storms were likewise numerous in the Cascade Range of Washington but less so than in 1932. This was shown by an analysis of the records kept annually by fire lookouts on the National Forests describing all thunderstorms seen during the summer. The lookouts selected for the analysis were distributed about 25 miles apart in a network covering nearly all of the mountainous territory of Oregon and Washington, or the principal areas of thunderstorm occurrence in these States.

As compared with the 10 previous years of record, 1935 differed by having the preponderance of its lightning storm days occur in July instead of having them in August or else more equally divided between July and August.

On July 23 thunderstorms were more widespread than on any other day since 1930. They were reported from each of the 10 National Forests that make a continuous 500-mile chain along the Cascade Range north and south through Oregon and Washington and from each of five forests in a 200-mile chain through the Blue Mountains of northeastern Oregon. Thunderstorms were extensive in the mountains of Oregon and Washington on several other days in the last decade of July, and from July 21 to 31 caused a total of 407 forest fires on the National Forests of the region.

During the entire season 885 forest fires, or 55 percent of all of the fires on these National Forests, were started by lightning. This great source of forest fires in which most of the danger was concentrated upon relatively few days placed a peak-load burden upon the fire protection organization.

PLACE NAMES FOR NATIONAL FORESTS

By I. J. Mason, R. 6

Mr. Guthrie's article "Naming the National Forests", in the November 11 and 25 issues of the Service Bulletin, calls attention to a subject which should be given more consideration. Guthrie arrives at the conclusion that place names are not desirable for National Forest names. It seems to me that this conclusion is erroneous. Place names have been overdone, but, where suitable names are available, they are of considerable value. It is granted that place names are not necessary to identify particular National Forests in the minds of the local public in the smaller cities and towns adjacent to them. The value of appropriate place names is for the use of the urban public in the major cities of the general region. On the Pacific Coast, for instance, the urban population in and around Seattle, Portland, San Francisco, and Los Angeles is 54 percent of the total population of the three Pacific Coast States. These people are all potential users of the National Forests of Regions 5 and 6. Public support of National Forest policies is largely contingent upon the interest and reaction that can be secured from this sector of the population. There is considerable value in having names for National Forests which can be readily identified by a large proportion of these people.

As an example, a Forest Officer gave a talk recently before the Northwest Mining Association and allied organizations in Spokane on "The National Forests of Washington". In his opening remarks he discussed their area, location, purpose, and value. Under location he was able to say, "Their names give a clue to their location... Olympic, Mt. Baker, Snoqualmie, Columbia, Wenatchee, Chelan, Colville, Kaniksu, Umatilla." Such place names are valuable, although several do not fit in with Mr. Guthrie's principles.

Mr. Guthrie would prefer Bonneville over Wallowa National Forest. Most people in Portland know at once what is referred to when the Wallowa National Forest is mentioned, but if the name were Bonneville it would be necessary to say "The Bonneville National Forest in the Wallowa Country".

The recent change in name of the California Forest to the Mendocino is a case where Mr. Guthrie's principles could well have been used. This Forest lies on the inner side of the Coast Range where there is no distinctive place name. As a place name Mendocino is identified by a cape on the Pacific Ocean and a county in which only a minor portion of the Forest lies. As a historical name it refers to a minor Spanish sea captain who never saw any of the Forest and whose memory is adequately perpetuated as indicated above. The name of a president or statesman might well have been used in this instance.

I would suggest the following principles in naming National Forests:

1. Prefer place names which readily identify the National Forests in the minds of nearby urban populations, providing a distinctive name is available and does not conflict with other established usage.

2. Lacking suitable place names, explorers', discoverers', presidents' or statesmans' names should be selected.

"A SUNDAY CHORE"

By I. M. Wyckoff, Tongass

Wrangell Narrows is a Mecca for deer hunters during the last three weeks of the open season, ending November 15. On Sundays and holidays the shores of the Narrows are lined with craft of all description, from the smallest skiff to the halibut boat class. The steamer channel through this Narrows is well marked with buoys and 5-pile and 7-pile dolphins supporting lights and day markers. But the smaller craft use many short cuts outside the steamer lanes over routes that would appear from the charts to be dangerous ground. It is of no particular moment to the navigator passing through the Narrows during this season of the year that every nook and cranny harbors a boat of some description, or that they are moored in parts of the channel ordinarily considered unsafe for navigation.

On such a day I passed through Wrangell Narrows at the wheel of the Ranger 8. It was Sunday November 10. That day, the previous Saturday, and the following Monday formed a three-day vacation, and everyone who could avail himself of transportation was out to get a deer. We, that is George and I, with the "8" had left Petersburg at 7 A.M. A heavy snow storm was on, and we saw little for the first 10 miles. From then on we noticed numerous boats at anchor. By 8:30 the tide was flooding rapidly and we were making slow progress; not over 5 knots. The range of tide that day was 23 feet and when we passed channel dolphin No. 10 against the current we were not doing more than 3 knots, although the boat averages eight. It was still snowing but the shoreline could be defined. A short distance south of dolphin No. 10 I made out the gas boat "Anne", a fine trolling craft from Petersburg, well out of the channel. As we passed abreast I waved to those aboard and gave them a short whistle, but principally minding the steering against the strong tide. George came up to the pilot house and said we were being signalled. My idea was that the hunters on the "Anne" were just saying hello and were about ready to move to other hunting grounds. However we turned back. Meanwhile the "Anne" had been drifting rapidly toward dolphin 10. As we came within hailing distance the owner told us he had hit a rock and jammed his rudder and consequently was unable to navigate. The current was momentarily carrying him broadside against the dolphin at the rate of about 5 knots. We called for a line and the boats were made fast on a bare clearance. At full speed ahead the Ranger 8 yanked the "Anne" away from certain disaster with less than a foot to spare between the "Anne" and the dolphin.

Eventually we put the "Anne" in a safe anchorage and proceeded on our way, polishing off the day by encountering a howling Stikine wind on our way to Wrangell.

The owner of the "Anne" and his hunting companions, the Superintendent of Public Schools, one of his Principals and one of the wireless operators; all of Petersburg are thankful the Ranger 8 happened along. George and I are glad we were able to be of assistance.

A BEST SELLER

By F. V. Horton, R. 6

The R-6 Recreation Handbook seems to merit some distinction as a "Best Seller". In response to specific requests it has been sent to 14 different States not including the usual list of Regional Offices. The demand is from various public agencies dealing with outdoor recreation and from colleges teaching forestry or landscape architecture.

When complying with a request for our Handbook, we invariably ask that the recipient send us any material available along the same line. We have on file some very interesting material uncopyrighted and unpatented which we use in whole or in part as we feel it fits our conditions.

YE EDITOR DISCOVERS

We are not going into the radio business, but it is interesting to note that the Forest Service now has about 1200 radio stations and, in addition, we have furnished radio equipment to no less than ten other government agencies and bureaus.

About 275 of our stations operate on the ultra-high-frequencies, that is, use wavelengths of less than 10 meters. This number exceeds that of any other agency and probably is greater than the combined number of all other active ultra-high-frequency stations in the United States. The ultra-high-frequencies are just coming into practical use. The technique is different from that involving the lower frequencies and comparatively little is known about it. Therefore, we have been forced into becoming one of the leading agencies in developing ultra-high-frequency radio equipment and technique.

Hearings on Forest Service appropriations for the fiscal year 1937 are expected to be held before the Agricultural Sub-Committee of the House Committee on Appropriations on or about January 20. The President has recommended an increase for the Forest Service of approximately five and a half million dollars, which if approved by the House and Senate will make it possible to finance from regular funds many essential activities now being handled on an "emergency" basis. This increase is divided as follows:

General Administrative Expense	$ 240,000
Protection and Administration	3,696,752
Forest Fire Cooperation	152,750
Research	311,000
Cooperative Distribution of Planting Stock	14,200
Plains Shelterbelt Project	1,000,000
Uinta-Wasatch Land Acquisition Fund	50,000

Preparations for the hearings are being made in the form of a short film showing forest activities and approximately 100 photographic enlargements of "before" and "after" scenes of Forest Service work to illustrate the points to be made by Mr. Silcox during his presentation. A booklet of selected pictures is also being prepared for the personal use of the Committee members.

Further hearings on the Northern Pacific case, authorized by the Act of June 25, 1929, will begin in Washington the latter part of this month, at which time both the Northern Pacific Railway Company and the Government will present to the Master detailed evidence in relation to certain of the points of law involved. It is understood that the Northern Pacific Railway Company also intends to present full evidence of the value of the lands which it claims in satisfaction of its alleged deficiency and which have been reserved for National Forest purposes. This fact creates the necessity for presentation by the Federal Government of what it believes to be the evidence of value of the same lands. In that connection, Assistant Forester M. H. Wolff arrived in Washington on January 8 to cooperate with the officers of the Department of Justice in the preparation of this part of the Government's case.

Following the hearings in Washington, further and more detailed hearings will be held in the field, but, in the absence of an announcement by the Master of his program for such hearings, it is not now certain whether they will be held exclusively in Spokane, Washington, or at several different points in geographical relationship to the NP grant.

The possibility exists that preliminary decision on certain of the legal points involved may minimize the necessity of presentation of detailed evidence regarding the value of the controverted lands, but if that proves not to be the case, and it becomes necessary to support the appraisals in complete detail by acceptable evidence, both the Forest Service and the Northern Pacific Railway Company will be confronted with a tremendous task. The two and a half million acres in controversy are distributed throughout 27 National Forests in Wyoming, Montana, Idaho, and Washington, so that the acceptable establishment of the true physical conditions and probable 1929 values of the lands by court procedure through the direct evidence of persons having actual personal knowledge of the properties might require each side to designate between 500 and 1,000 witnesses. It thus seems evident that both Region 1 and Region 6 will have a busy year, and even Region 2 will not wholly escape the special requirements, since about 48,000 acres of controverted lands are in the Shoshone National Forest.

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Robert Fechner, Director of Emergency Conservation Work, has announced that the strength of the CCC has been set at 428,000 enrolled men for the quarter beginning January 1, 1936. This figure represents a reduction of 72,000 men below the previously authorized strength of 500,000 enrollees. This reduction of the enrolled strength of the Corps was made as a part of the general program which calls for the gradual reduction of the CCC to 300,000 men by July 1, 1936.

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The land acquisition cases covered by option at approved prices and now awaiting action in the Washington Office have passed the four million dollar mark and are continuing to arrive at a rate which suggests that the five million dollar mark shortly will be exceeded. The available non-expended and unobligated part of the land acquisition allotment will not permit action on more than a minor part of the cases already on file, and circumstances which recently have arisen create some uncertainty as to whether the available fund can be used for land purchase or will have to be devoted to other purposes. Due to that fact, the date of the next meeting of the National Forest Reservation Commission is as yet uncertain, but the present hope is to hold a meeting during the present month and to obtain approval of all cases for which funds are available.

The budget for the fiscal year 1937, as presented to the Congress on January 6, contains no specific item for forest land acquisition, and the way in which this work is to be conducted after July 1, 1936, has not yet been clearly established, but it is hoped that adequate provision will be made for a continuation of the activity.

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Regional Forester Evans has announced that he will hold a meeting of all recreational planners of Region 7, in Washington, during the period from January 20 to 24. The program in the main will consist of discussions of the particular problems of design and construction which each regional planner has had to meet during the past year, together with discussions of any changes in existing policy and procedure in relation to recreational development and use which have been suggested by past experiences in the Region.

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A Christmas tree purchased in Washington, D.C., bore the tags of a Los Angeles, California, dealer. The wording on these tags was, in part, as follows:

"The largest selling Christmas Tree in America."
"The cutting of this tree was not destructive,
but gave needed room for neighboring trees to
grow faster and better."

We wish to bring to the attention of the Eastern Regions that their market is being invaded by Californians and ask them what they are going to do about it?

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The forest area of Switzerland is 1,003,500 hectares, or 2,480,000 acres. This is 24.3 percent of the total area of the country. The heaviest forested Canton (State) is Schaffhouse, which is 40.3 percent wooded. Geneva Canton is only 8.9 percent wooded.

The area planted from 1872 to 1923 in Switzerland is 17,000 hectares, or 42,000 acres.

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After several postponements, the Forester's special committee on fire control will meet at Spokane, Washington, on February 17. The chief topics of discussion at this meeting will be: Fire Control Practice and Policy; The Equipment Laboratory at Spokane; and Research, Its Role - Interrelations of Research and Administration.

WASHINGTON OFFICE PERSONNEL CHANGES

Dr. Homer L. Shantz, President of the University of Arizona, has been appointed by the Forester to be Chief of the Division of Wildlife Management. The appointment will become effective June 1, 1936.

Dr. Shantz has since his boyhood days been intensely interested in the conservation of American wildlife. He has followed biological, botanical and zoological lines of work throughout his career as a scientist and educator.

Born in Kent County, Michigan, January 24, 1876, Dr. Shantz received his B. S. and Doctor of Science degrees from Colorado College; from the University of Nebraska he received his Ph. D. degree. He was an instructor in botany and zoology at Colorado College, an instructor of botany at the Universities of Nebraska and Missouri, and was Professor of Botany and Bacteriology at the University of Louisiana.

Following his teaching work in these Universities, Dr. Shantz began work with the Department of Agriculture in 1910, assigned to the Bureau of Plant Industry, as a plant physiologist and botanist. In 1926 and 1927, he collaborated with government scientists in the Bureau of Plant Industry, and later with the Bureau of Agricultural Economics.

Dr. Shantz returned to educational work as Professor and head of the Botany Department of the University of Illinois until his election as President of the University of Arizona, which post he has held since 1928. He has been a special lecturer on plant geography, and is a member of various State educational boards in Arizona and many national and international scientific societies. He is a member of Sigma Xi, Phi Kappa Phi, Theta Xi, Theta Alpha Phi, and Alpha Zeta fraternities. He is a member of the Explorers Club, New York, the Cosmos Club, Washington, and other organizations.

Dr. Shantz' career embraces wide experience in Africa. He received a special detail to determine natural plant resources and crop production possibilities of large portions of this continent, and later expanded this field of inquiry for the use of the American Commission to Negotiate Peace, 1918-19. He was also detailed as an agricultural explorer with the Smithsonian Institution African Expedition in 1919, and also was named a member of the Educational Commission to East Africa under the auspices of the Phelps Stokes Fund and the International Educational Board, in 1924.

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George W. Trayer, research engineer at the Forest Products Laboratory, has been appointed Chief of the Forest Products Division. He succeeds Harold S. Betts, who at his own request has been released from these duties to devote full time to contacts of the Division with other departments of the Government in connection with the application of Laboratory findings to the selection and purchase of lumber and other forest products.

Mr. Trayer, born in Iowa, and holding degrees from the University of Wisconsin, has been a member of the Forest Products Laboratory for 16 years. He is recognized as an authority on the use of wood in aircraft and has had long and varied experience in the theory and practice of timber design. At the Forest Products Laboratory and in collaboration with industries he pioneered in the introduction of modern timber connectors, making possible greater strength in wood construction. By the use of these connectors and improved design, a wood radio tower over 300 feet high has recently been erected, the superior insulating qualities of wood making possible the doubling of radiation of antennae energy.

His scientific contributions in the aircraft field have become the guiding design standard for the Army and the Navy, both for wood construction and for application to the use of other materials. Mr. Trayer is also author of a book on "Wood in Aircraft Construction". Improvements in bracing methods developed through Mr. Trayer's work at the Laboratory have contributed to safer construction in earthquake areas. By application of aircraft wood construction principles to glued plywood products, he has developed superior types of paneling and better structural design for units of houses suitable for prefabrication. More satisfactory fastenings and greater convenience in erection of these units in the field are other achievements.

C. A. PLASKETT

The Forest Products Laboratory suffers a serious personal and official loss in the death of C. A. Plaskett, who died of pneumonia December 23, in Madison, Wisconsin. Mr. Plaskett was in charge of the container investigations divisions of the Laboratory and was recognized as a national authority on the construction of wooden and fiber containers.

Mr. Plaskett is the first of the younger members of the Forest Products Laboratory to be taken by death while actively employed at the Laboratory in many years. Fellow members of the Forest Service paid high tribute both to his technical ability and important accomplishments, and to his high sterling character.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.
>
> Theodore Roosevelt

Vol. XX No. 3 Washington, D. C. February 3, 1936

THE TIMBER CROP AND ITS HARVESTING

By E. E. Carter, Washington

As a rule, the point of delivery of the products of German forests is roadside. That means that the harvesting of the crop is part of the job of land management. The haul to the mill or point of storage or consumption is done by the purchaser but he does not work in the forest stands. Even in the relatively few cases of forest ownership and management by the manufacturer, this division of duties between the land or forest management and the processing management is recognized. With our "lumber industry," the control of the future productiveness of the land is in the hands of the manufacturer. In Germany, the forests are comparable to our wheat farms, with the farmer growing the crop, harvesting it, and making the first movement of it off the ground on which it grew. The sawmill man or other processor in Germany is comparable with our miller, who buys wheat at the first or subsequent points of delivery, but does not, as a rule, buy his wheat standing in the field.

The German forester is also the logger. If his stand is not in good condition, he can not use "unnecessary logging damage" as an excuse. (We saw no places where such an excuse would be needed.) In his thought and practice, continued growth from the soil, in the largest practicable quantities, dominates everything else. As a result, we saw the care of advance reproduction carried to the extreme, on American standards, in some places; and, on the other side, the German foresters know timber values and plan their silviculture for quality production as well as quantity.

Sustained yield is so firmly established in the German forests that its practice is taken for granted. No one thinks of any alternative. Consequently, the logging crew is practically permanent, usually on a part time or seasonal basis. Local labor comes back - and is rehired - year after year, and the wages earned are an essential part of the family budgets. The loggers are a part of the forest force, with the loyalties, interest, and desires to help in the continuance of the forest that the right sort of men always come to have under such circumstances. Some of them work in the forest outside of the logging seasons, on road maintenance for example, while others farm or follow other callings in the summer. The point is that the logging, the annual removal from the forest of the amount grown in that year, is an essential part of a stable local economy, and that the practice of forestry gets the benefit of a stable crew of laborers who know what is wanted, believe in it, and further it as they have the chance. It is to their long time interest so to further it, and they know it. Fire prevention is almost subconscious, for example. The nomadic woods worker is rare if not unknown. We saw one case where laborers who had been deprived of stable work by a great insect infestation had been relocated and absorbed into the force on other forests, without family disruption or change in the stability of employment, and with the equivalent of "subsistence homesteads" furnished. And we saw many cases where the effect of having the logging done as part of the management of the land and under the same direct control had given the most advantageous results to the condition of the forest.

Is it not logical and sensible that the crop-grower should harvest the crop, and turn it over to the processor or manufacturer at the point where its influence on the management of the land ceases, for timber crops as well as others?

BONNEVILLE DAM HAS MANY VISITORS

By Albert Wiesendanger, Mount Hood

Bonneville Dam, which is being constructed near the mouth of Eagle Creek along the west boundary of the Mount Hood National Forest, has become the greatest tourist attraction in Oregon, with 318,493 persons registered as visitors since December 1933, according to figures compiled by the Portland Chamber of Commerce. In a comparable period 226,400 visitors registered at Crater Lake and 58,170 at the Oregon Caves.

Since visitors are not permitted to picnic or camp on the Dam area most of them use the National Forest camp and picnic grounds at Eagle Creek.

This has caused the following increase of attendance at this important recreational area.

1933		1934		1935	
				April	3,641
May	4,930	May	5,263	May	9,015
June	9,150	June	10,872	June	8,500
July	11,895	July	13,681	July	11,550
Aug.	8,185	Aug.	9,813	Aug.	11,935
Sept.	4,015	Sept.	5,600	Sept.	6,610
Oct.	921	Oct.	2,088	Oct.	2,012
	39,096		47,317		53,263

Bonneville Dam has attracted visitors from every State in the Union, according to official records maintained by Major H. A. Skerry of the United States Army Engineers' Office. In addition are registered residents of Alaska, the Canal Zone, Hawaii, Canada, Australia, Peru, England, Ireland, Norway, Sweden, Denmark, China, Japan, Germany, and Singapore.

The figures include only those who have entered the official Bonneville grounds, and take no account of the thousands who have viewed Bonneville from one of the view sites along the highway in Oregon or Washington.

The figures also show that interest in the project is increasing as the work progresses. While there were only 96,361 visitors for the entire year of 1934, this number jumped to 220,782 in the first 11 months of 1935, a gain of 129 percent.

The attention of many has been called to Bonneville through the publication of stories on the project, sent out over the past year and a half by the Portland chamber. Practically all of the technical magazines, the Chemical and Metalurgical Review, Engineering News Record, Electrical West, Pacific Markets, various mining publications, and many travel booklets have carried illustrated articles on the project. In addition, the railroad companies were provided with information, photographs, and descriptive articles by the chamber's advertising and travel department.

Names of outstanding figures are registered. Heading the list is President Roosevelt, who spent sometime at the project following his return from Hawaii in July, 1934. Others are ex-President Hoover, William Green, President of the American Federation of Labor; General Chang, Commander of the 4th Chinese Army; Frank N. Belgrano, Past National Commander of the American Legion, and Connie Mack, Manager of the Philadelphia baseball club.

Organized trips of inspection were made by the following groups: national officers of Railway Conductors, American Society of Highway Engineers, National Geologists' Association, Northwest Savings and Loan Association, Portland Chamber of Commerce, University of Washington professors of engineering, Omnibus College of Wichita, Kan.: Oregon State College engineering students, Oregon City Chamber of Commerce, and teachers of Skamania County, Washington.

Since the construction work started, it has greatly increased the fire hazard in the Columbia Gorge. Many temporary shacks for workers to live in have been erected on private land adjacent to the National Forest. Many of the hundreds of employees working only 30 hours each week have used their leisure time going up the many Forest Service trails which leave the Columbia River Highway in the vicinity of the dam. Considerable slash burning was necessary owing to relocation of the Union Pacific Railroad and Columbia River Highway.

Local Forest officers realizing this increase of fire hazard have used the following methods to prevent fires:

a. Fire prevention programs in local schools.

b. Rigid inspection of shacks constructed near the National Forest boundary and strict enforcement of fire laws regarding smoking while traveling, and slash fires.

c. Cooperation from U. S. Engineers by having them provide a truck for fire fighting along the Columbia River Highway. The truck complete cost $3200 and 4 drivers are furnished by U. S. Engineers, who are on duty night and day and subject to call of local Forest officers.

During the past season 12 arrests were made for fire law violations, and each case was won.

The Bonneville Dam is expected to be completed next year. After its completion it will continue to be one of the greatest attractions located in the Columbia Gorge.

To meet the increased use at Eagle Creek a crew of 60 CCC workers are engaged this winter in making various recreation improvements, which it is expected will make this one of the outstanding recreational areas in this region.

SCIENCE IN THE NEWS

"A few years ago, science was not news," writes Chester H. Rowell, Editor of the San Francisco Chronicle, in Editor and Publisher (Dec. 21), "except when it blossomed out in some spectacular invention that we could ride on, eat or wear, or sell for money. Now science itself has become news and people have curiosity about it. Curiously enough, the farther away the scientific fact is the better people like it. The two most interesting sciences are archaeology, which digs up things thousands of years old, and astronomy, which reveals things perhaps millions of light-miles away. Perhaps this is because science has taken the place in the imagination of many people once occupied by religion. In the days when life was narrower, each person knew his own neighborhood and his own particular doctrine of the nature of the Infinite and Eternity, and hardly anything between these extremes. Perhaps there is something of the same attitude still which makes the news of today's prizefight and of the excavations at Ur of the Chaldees interesting but the crisis in Europe 'highbrow'.

"Anyhow, if we are going to print scientific news why not print it right? Not perhaps in the Sunday magazine pages. There the tradition of fantastic speculation is too firmly rooted. The question is not what has been discovered, but what somebody who knows nothing about it imagines might come of it. Let the Sunday magazine indulge in that if it likes. Also, the various strictly scientific services are doing very good work and what comes from them is likely to be both popular and sound. But it is not too much to say that much of the incidental scientific news which comes over the wires or across our city desks would give the horrors to anyone who had had a course in general science in the freshman year of high school and still retain some fraction of that knowledge.

"It is neither necessary nor possible for every copyreader to be a scientist. But there ought to be someone somewhere, along the line from the original interview with the scientist to the proofreader, who had at least an amateur and popular knowledge of what it was all about."

A SALE REPORT, FROM TWO VIEWPOINTS

By Region 7

The Allegheny Forest has just closed a sale of hardwood pulpwood, with a cut of 419 cords from 85 acres. Stumpage was $.50 per cord and receipts were $209.50.

Yes? So what? All right. Here is the real story.

The area now in the Allegheny had originally a very fine forest of hardwoods, hemlock and pine. Practically all of this old forest was cut over before the land was purchased, and came to us in varying conditions of wreckage. The big job is to rebuild the forest. Meanwhile there is social wreckage in the neighborhood as the result of "cut out and get out." It takes ingenuity by the present force in making and grabbing opportunities to begin on the rebuilding jobs.

One area, significantly known as Maple Run, was cut over about 40 years ago. Everything worth taking was cut, and probably a lot more was smashed. Most of the beech was not worth taking, so it was left. The recuperative power of this sort of forest is marvelous; so, in spite of the tough treatment given, young hardwoods quickly covered the ground. After 40 years, we had a promising stand, containing many well-formed hardwood trees of future promise but reduced in growth and in future value by the hold-over beeches and by those young trees which grew fastest and developed wide crowns and limby or crooked stems. Nature was taking its usual course, effective in time but wasteful.

The local custom on private lands is to cut such stands clean for pulpwood and chemical wood. Cuts of less than 10 cords to the acre were believed to be out of the question. Ranger Cochran apparently did some skillful P. R. work, leading one operator to apply for the chance to try the kind of cutting which the ranger wanted to give this 40-year-old stand. The marketing of the defective and poorly formed trees on the 85 acres took four days and the application of brains. Where the removal of a wide-spreading old beech would make too large a hole, it was left to augment the game food from the second growth of the same species. A lot of the young black cherry, necessarily dominant because of its intolerance and faster growth was of poor form or excessively limby, and, when the returns were all in, nearl- three-quarters of the volume cut was of this species, with hold-over beeches making up most of the rest. This combination gave pulpwood of good size for peeling and handling. It also took as many as 30 wood-cutters off the relief rolls.

The pulpwood went to a mill which makes the paper for the Saturday Evening Post and the Ladies Home Journal. The purchaser let contracts for cutting and hauling and made a reasonable profit without risking very much cash. The laborers had desperately needed work. The forest got the improvement cutting it needed on the 85 acres, and is the better for it. All want more. Meanwhile this winter the tops and stuff too defective for pulpwood will be worked into chemical wood at $.25 per cord stumpage, with more work for the local laborers and a cleanup of the ground.

A good job, socially and silviculturally, was in that sale.

THE GRAVE CREEK BRIDGE

By James Frankland, R. 6

To save 40 miles in travel from the Rand Ranger Station to the north side of the Rogue River in case of forest fires and afford a crossing capable of withstanding heavy flood periods, the Grave Creek bridge on the Siskiyou National Forest in Southern Oregon, built entirely by CCC boys, has been one of the most important and outstanding engineering projects in Region Six this year. The bridge was designed by Engineering and built by the Siskiyou.

Not only does this structure give access to mining country, but it makes possible a beautiful loop trip of 80 miles from Grants Pass, permitting recreationists to drive down the Rogue River canyon to the bridge, crossing it and returning to the Pacific Highway, 17 miles distant, at Wolf Creek. Although the Rogue River is ordinarily a docile stream, in February, 1927, it rose over 60 feet, tearing a steel bridge from its piers and carrying it a mile downstream. The Grave Creek bridge is the only vehicular structure for 45 miles on this rugged stream and is designed for single lane traffic with the same maximum load allowable on state highways.

The span is 344 feet long and clears the normal water surface by 75 feet. It is of the suspension type with steel cables and creosoted timber deck, towers, and stiffening trusses. The two galvanized steel cables on each side are 2½ inches in diameter, and each has a strength of 256 tons and weighs five tons. Each pair of cables is attached to the solid rock wall of the canyon by three 35-foot steel rods anchored into a tunnel filled solid with a concrete block weighing 100 tons.

The stiffening trusses are composed of creosoted Douglas fir timbers joined with split ring connectors. This type of connector has been in use in Europe for many years, but has only recently come into general use in this country, thus opening up a new field for utilization of West Coast timber.

Materials used for the bridge include 103,000 feet of lumber, 400 barrels of cement, and 52,000 pounds of rods, bolts and hardware exclusive of the main cables.

The span was hung on the cables 70 to 100 feet above water without the use of any false work or scaffold. As soon as the floor beams were hung, woven wire was stretched on the floor and on each side of the runways as a safety measure. Although it took a year to complete the work, there were no accidents worthy of mention--only part of a day being lost by one boy who had received a minor injury.

The bridge was opened to traffic on November 18, 1935. The first "pay-load" crossing the bridge consisted of a train of loaded pack mules taking in mine supplies.

YE EDITOR DISCOVERS

In accordance with previous recommendations by the Regional Foresters, the Forester last summer recommended to the Secretary that 237 additional field-going positions which are still held in the 70-year retirement age group be placed in the 62-year age group. This recommendation was approved by the Secretary and forwarded to the U. S. Civil Service Commission for consideration, joint approval by the two agencies being required by law. We have just been informed by the Secretary that the Commission is unwilling to acquiesce in the assignment of these employees to the 62-year retirement age group, with the possible exception of Forest Game Warden and Scaler, respecting which the Civil Service Commission indicates a report will be made at a later date.

No action leading to an appeal from this decision is contemplated at the present time. There is a possibility, however, that by means of certain legislation, the enactment of which has been discussed, it may later be possible to place these positions in the 65-year retirement age group.

The ruling by the Commission has no final bearing on the action that may be taken with reference to classifying individual cases which may be sent to it for determination.

Under the retirement situation as it now is, only Assistant Regional Foresters, Supervisors, Assistant Supervisors, and Rangers are authorized to retire at the age of 62.

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Returning from a voyage to Puerto Rico, A. Gael Simson, head of the Radio Project, reports that radio service linking the forest units and headquarters on the island is contemplated and is apparently feasible.

However, there are a lot of technical humps to be hurdled before Forest Service apparatus begins to appear in any great quantity on the Caribbean. Weather is the prime difficulty, for Puerto Rico, according to Radioman Simson, is far from dry. In fact, 150 to 175 inches of rainfall is not unusual.

"It's like operating a radio set in a good warm shower", Mr. Simson explained. "Also, we have to take into account the large amount of salt in the air -- another factor which can play the dickens with radio equipment."

Heavy rainfall and frequent hurricanes make radio on the Puerto Rican forests a much more practicable means of emergency communication than land-line telephone. Maintenance costs on lines come high. In fact, the regularity of storm winds and wet weather justify the full use of radio, just as forest fires (which are practically non-existent in Puerto Rico) do in our continental regions.

The tentative plan as sketched by Mr. Simson calls for the use of Type M and Type PF sets (these to be modified where necessary to meet the climatic conditions) rather than the installation of ultra-high frequency apparatus. The choice of equipment operating on the 3000 kilocycle channels instead of the ultra-high was made because interference from static was less than had been expected, he pointed out. Since static interferes with the lower frequency signals much more than the ultra-high, the choice of the 3000 kilocycle equipment proved to be a good break for Forest Service radio plans. It allows longer range operation than the ultra-high equipment, and longer range is needed to hook together the scattered forest units on the island.

Type M sets will probably be used one to a Forest unit, Mr. Simson said, operating in contact with several of the lower-power PF sets carried by the CCC camps and work crews. Forest Service headquarters at Rio Piedras, not far out of the main city of San Juan, would also use a Type M set, necessary to jump the spine of mountains which traverse the center of the island.

"A PF set, located in one of the low shelters built especially for hurricane season use", Mr. Simson said, "would prove its worth compared to a tangle of down telephone lines. When those hurricanes hit, they hit hard."

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The value of the conservation work completed by the Civilian Conservation Corps during the first thirty months of operation has been estimated by the Department of Agriculture, the Department of the Interior and the Department of War at $579,000,000, according to a recent report by Robert Fechner, Director of Emergency Conservation Work.

Among the principal items of work completed up to September 30, 1935, upon which the valuation was based ,are the following: 405,402,500 forest trees plated over denuded areas; 62,593 miles of new service roads and truck trails constructed through timbered areas principally for fire protection (Of this amount nearly 60,000 miles were truck trails) and 30,121 miles of new telephone lines built into the nation's forest and park fire detection systems. Service roads and truck trails were maintained over 155,000 miles; telephone lines were maintained over 75,000 miles; over 1,223,000 man-days were devoted to fire presuppression and more than 2,244,000 man-days spent in fighting forest fires. A total of 44,040 miles of fire breaks were opened up through forested areas; fire hazards reduced over 1,274,201 acres; 2,428 lookout houses and lookout towers constructed in forests and parks for fire detection; forest stand improvement work completed over 2,094,000 acres; a total of 16,250 acres covered in campaigns to control rodent destruction; a total of 5,035,158 acres covered in campaigns to reduce losses caused by beetles, moths and other insects; tree and plant disease control work conducted over 4,815,684 acres; 1,635,000 check dams built in gullies to control soil erosion; completion of timber estimating 25,239,731 acres and construction of 26,521 vehicle bridges.

The Office of the Chief of Finance, U. S. Army, estimates the total obligations of Emergency Conservation Work through September 30, 1935, at $1,006,500,000. Of this amount about $541,000,000 have been obligated for materials, supplies, shelter, foodstuffs, medical supplies and equipment, clothing and transportation of men, equipment and supplies.

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National Forest grazing fees for 1936, based upon the relation of prices received for cattle and lambs by purchasers in the Western States over a period of years, are as follows: Cattle - 13.05 cents per head per month; sheep - 3.36 cents per head per month. This represents an increase of fees over 1935 of 62.4 percent for cattle and 24 percentfor sheep.

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Chief Lecturer H. N. Wheeler last year gave 150 lectures before approximately 33,342 persons. Eighty-two of these lectures were made to 145 CCC camps with an attendance of 24,755, three were radio talks in North Carolina, and thirty-seven of the lectures were given before groups in the Shelterbelt area.

CORRECTION

The meeting of the Forester's special committee on fire control will open at Spokane, Washington, on February 10, not February 17, as stated in the last issue of the Bulletin.

CONE CROPS

Some interesting facts are available from cone crop examinations which have been conducted for eight years in western white pine stands. One plot containing 82 pines from 4-19 inches d.b.h. gives an indication of the seed-bearing ability of different sized trees. Trees 4-8 inches d.b.h. bore an average of 0.1 cone per tree annually for the 8-year period; trees 8-12 inches bore 3 cones; trees 12-16 inches, 6 cones; and trees 16-20 inches bore 11 cones per tree per year. Twenty-five cones or more represent a large crop though individual trees bear as high as 225 cones.

Eighteen seed trees between 13 and 19 inches d.b.h., inclusive, bore the following numbers of cones per tree during the eight years indicated:

	1927	1928	1929	1930	1931	1932	1933	1934
Total cones	172	29	284	128	9	303	70	0
Ave. per tree	9.6	1.6	16.0	7.1	0.5	16.8	3.9	0

The 1926 cone crop was one of the noteworthy bumper crops. Thus about one year in three can be counted upon for a good crop with some seeding in between.

The extremely low precipitation in the 1934 season resulted in drought mortality among seedlings somewhat heavier than usual. This factor accounted for 15 percent of total mortality in western white pine and 52 percent in western hemlock among the 1-year old seedlings on a lower north slope at the Priest River Experimental Forest. The much better survival of the pine is chiefly attributed to the marked difference in root penetration. In the middle of August seedling root length on this site averaged 7 inches for white pine as against 2.5 inches for western hemlock. As a result, drying of the surface soil killed large numbers of the relatively short-rooted hemlock. Fungi, insects, birds, and rodents caused the loss of about 37 percent of total germination for both species. Heat, drought, and other physical causes, however, accounted for 60 percent of total germination of western hemlock but only 19 percent of western white pine. - From a Monthly Report of the Northern Rocky Mountain Forest and Range Expt. Sta.

CANADIANS PUT HIGH VALUE ON SHELTERBELTS

Hundreds of inquiries made of farmers give the valuation of their shelterbelts from $500 to $5,000, the average being around $1,000. That this valuation is not excessive is shown by a recent decision handed down by an Alberta court. In this case the landlord sued the tenant of his farm for damages to a wind-break of trees planted around the lot containing the farmhouse and other farm buildings. The wind-break was damaged but not destroyed, and a witness for the defendant contended that with good care and attention and the planting of fifty to one hundred new trees the damage would soon be repaired. On the other hand, witnesses for the plaintiff estimated the damage at from $1,500 to $2,000. After reviewing the evidence, the learned judge stated his conclusion as follows:

"On the whole I think the proper amount to allow would be $1,000. I think with the expenditure of quite a bit less than this sum, and with care and attention for a few years, the wind-break can be practically as good as ever. But the value in the meantime will be lost, and, therefore, I think the amount mentioned is not excessive."

Judgment was given on this basis.

From Department of Interior of Canada, Forestry Branch Bulletin No. 62 (Success in Prairie Tree Planting) by Norman M. Ross, Chief, Tree Planting Division, Indian Head, Saskatchewan, 1924.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

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Vol. XX No. 4 Washington, D. C. February 17, 1936.

FEDERAL COOPERATION IN RECREATIONAL PLANNING

By Henry A. Wallace

(From his address delivered, on invitation of the Board of Directors of the American Planning and Civic Association and the National Conference on State Parks, at the Conference on the National Park Service, Washington, D. C., January 22, 1936)

The two major agencies of government concerned with the development and management of outdoor recreation on federal lands are the National Park Service of the Department of the Interior, and the Forest Service of the Department of Agriculture. In some respects these two agencies have a common problem, but there are also fundamental differences in their objectives which ought not be lost sight of. I should like this evening to discuss both similarities and differences, in order to show the extent to which recreational planning can properly be a joint endeavor. ***

The general public has come to understand better than ever before the relationship of forest lands to the problem of planned land use. Forests constitute, today, nearly one third the total land area of the continental United States. Forests, as products of the soil, are susceptible of renewal and management. Farm woodlots occupy more acres than any other crop on American farms. Maintenance of forests and forage cover helps prevent erosion. It is vital to supplies of water for irrigation, for power, and for domestic use in huge centers of population. Forest lands and all their many resources are, in other words, essential to the social and economic welfare of the whole nation.

Until comparatively recently, however, recreational enjoyment of forest areas in this country has been largely incidental. It is now much more than this. People do not, as a rule, live in the forest any more. Instead, they go there to enjoy themselves. They are conscious of their purpose; have come to realize that forest recreation has a definite value in their lives. They are willing to devote time and money to it; they now definitely want recreation included as a planned forest-land use. And the demand for forest recreation has grown enormously.

The increasing use of the National Parks is a case in point, as is the use of the National Forests, which in 1917 were visited by some three million people, and in 1934 were visited by thirty eight million, with every State in the Union heavily represented. Not all these people were recreationists, strictly speaking, although it is estimated that more than 13 million of them were. With people flocking to our forest areas in such numbers, the need is apparent for developing in a planned way all our national recreational resources now in federal control.

The National Parks are superlatively beautiful. Restricted in the main to areas of national and international interest and charm, they offer unparalleled opportunities for inspiration, education, and recreation, to which uses they are rightfully confined. But following a specific mandate from the Congress, all the many National Forest resources must be devoted to their most productive uses. Recreation is one of those resources, but not the only one. Therefore uses of such resources as timber, forage, and water power, which help bring security to more than 1,000,000 dependent people in nearby communities, must be coordinated and correlated with recreational uses.

It is important to have clearly in mind this vital difference between these two distinct types of federal reservations, for it makes different approaches to the common recreational problem necessary. In National Parks, education and recreation are probably the only uses which should be permitted. In National Forests, recreation must of necessity be developed as one of many uses; seldom if ever can it be given long-time exclusive dominion over any considerable area; always it must be correlated and harmonized with existing or potential uses of all resources upon which individuals and communities depend for their existence.

These differences, striking though they are, cannot conceal the fact that both National Parks and National Forests are part of the whole public effort in recreational management on federal lands. Probably few impartial observers would be found who would deny a large part to each in the picture as a whole. Certainly the Department of Agriculture has steadily believed in and supported the reservation and management as National Parks of outstanding areas where present or prospective uses of other critically important resources were not of major importance.

Indeed, the present National Parks contain over 2,500,000 acres which have been transferred with the concurrence of the Department of Agriculture from National Forests previously under its administration. Glacier, Grand Canyon, Lassen Volcanic, and the Rocky Mountain National Parks were once almost entirely reserved for National Forest purposes, as was a part of Bryce Canyon. Yellowstone, Sequoia, Yosemite, Mount Rainier, Crater Lake, and Wind Cave now consist in part of lands the transfer of which from National Forests was agreed to by Agriculture. The Cedar Breaks National Monument came into being through concurrence and voluntary elimination of the area from a National Forest. When the Smoky Mountain National Park was proposed, Agriculture abolished the established National Forest Purchase Unit which embraced the desired area.

The Department of Agriculture has consistently taken the position that National Park status should be given to specific National Forest areas if unique scientific or educational values or superlative scenic qualities are of such national importance as to justify complete exclusion of all commercial and industrial uses of the natural resources within or directly dependent upon the specific area in question.

This principle is, I believe, logical and readily understandable. It is not applicable to relatively small areas which are an integral part of the National Forests which surround them. To apply it to such areas would inevitably result in confusion, in unwarranted additional expense for protection and administration, and in a break-up of the entire National Forest system. But to larger areas it is the yardstick which the Department of Agriculture applies whenever requests are received for transfer of lands from a National Forest to a National Park status.

The need for recreation is becoming increasingly acute these days. Machines have taken over many chores that used to be daily duties in every household. The tempo of our lives is speeded up. We have less physical exertion, but greater mental strain. The necessity for the right sort of recreational opportunity is obvious.

The National Forests must, to the fullest extent possible, supplement the National Parks in offering such an opportunity. The National Forest system now includes 154 established units. They are located in 37 States, Alaska, and Puerto Rico. Their protective mantle covers parts of every major mountain system and forest region in the United States. Their boundaries embrace great sweeps of forest broken by mountain ranges and peaks, by canyons and chasms, lakes and streams, open parks and verdant meadows. hey are the home of game and fish - the refuge for much of our remaining wildlife. Recreation is one of their many resources which through planned development may properly be used in the interests of the greatest good to the greatest number of people in the long run.

Most National Forests are readily reached from established rail, highway, and air systems. And although most of them may be penetrated over thousands of miles of roads and trails, there are also primitive areas where man may still pit his endurance and exert his skill in woodcraft against many of the same obstacles that were encountered by the Indians hundreds of years ago. In other localities there are, in contrast, summer homes, hotels, dude ranches and resorts, countless places to camp at will, and more than 3,000 free campgrounds equipped with modern coveniences. And there are chances galore to hunt, fish, botanize, geologize and hike; to visit timbered slopes, snow-capped peaks, rushing streams and placid mountain lakes.

These are the things that the majority of National Forest visitors want. Most resorts are unostentatious and inexpensive. Annual rentals for individual summer homesites, for which permits are issued, are low. Their number, size, and location are restricted. Incidental uses - by people who want to picnic, camp for a night or two, or hunt with camera or gun ,are encouraged. Policing is kept to that minimum which will provide safety to public health and property. No charge has been made at the simple public camp and picnic grounds developed by the Forest Service. Recreational facilities for the many take precedence always over those for the few.

It seems to me that the simple form of recration is the type which should be continued on the National Forests. For they offer innumerable opportunities to that big majority of people which prefers - or which for financial reasons must find - informal and inexpensive recreational opportunities. And so long as outlets like these do not injure the public property or interfere seriously with the health and enjoyment of others, and contribute to social welfare, a well-planned national recreational policy can hardly deny them. And although some of these forms of recreation might conflict with National Park objectives and standards, they can properly be permitted as a part of planned recreation on the National Forests.

I have referred to certain differences in character between the National Park and the National Forest systems, and indicated that these differences necessarily lead to different approaches to the common recreational problem. There is, however, one principle which the two systems have in common which it is equally important to have clearly in mind. It is what is sometimes referred to as territorial integrity.

Decision was reached years ago that there should apply to the National Park system that fundamental principle under which all uses shall be planned, and all National Park resources administered, by a single organization. This has become so well established and has brought such excellent results that no one would seriously consider, now, that timber in the National Parks should be protected and preserved by one Department organization or Bureau, wildelife by a second, with a third to care for visitors and guide them to those inspirational and educational values of which timber and wildlife form an integral part. Such an arrangement would lead to inevitable confusion and, because so many different organizations must constantly go over the same ground, to additional and unwarranted expense as well.

The same principle was applied more than 30 years ago to the National Forests. It is vital to the efficient public service which has been rendered by the National Park Service and the Forest Service. Without it neither the National Park system nor the National Forest system can adequately or successfully meet the objectives for which they were created.

I understand that the new Recreation Bill provides for national planning and adequately protects that principle of territorial integrity which is essential to efficient public service by both these agencies of federal government. I sincerely hope that this is so, for the Department of Agriculture has long been an advocate of national land-use planning and I assure you it will actively support constructive legislation which facilitates national planning for recreational use.

WILDLIFE CONFERENCE VOTES TO FORM A GENERAL FEDERATION

The North American Wildlife Conference which was held February 3 to 7 in Washington, D. C., voted unanimously for the formation of a General Wildlife Federation representing all organizations interested directly or indirectly in the conservation and restoration of wildlife. A temporary organization with Jay N. Darling, former Chief of the Biological Survey, as its chairman was formed at the Conference for the purpose of effecting a permanent organization. Under the constitution adopted at the Conference, the General Wildlife Federation will be made up of representatives in each county of the various sportsmen's groups, clubs, chambers of commerce, young folks organizations, etc., who will in turn select representatives for each State. State representatives will select regional chairmen, who will constitute the Board of Directors of the Federation.

Some 2,000 persons attended the Wildlife Conference, of which F. A. Silcox served as chairman by appointment of the President. General sessions of the Conference were held in the connecting wing auditorium of the Department of Labor, while group sessions were held at the Mayflower Hotel. Among those who spoke at the general sessions were Secretary Wallace, who presented a message from President Roosevelt; Secretary of the Interior Ickes; Senator Key Pittman; Juan Zinser of Mexico City; Hoyes Lloyd, Supervisor of Wildlife, National Parks of Canada; Frederic Delano of the National Resources Committee; I. N. Gabreilson, of the Biological Survey; Jay N. Darling; Mrs. Roberta C. Lawson, President of the General Federation of Women's Clubs; L. W. Barclay, Director of Activities, Boy Scouts of America; John H Baker of the National Association of Audubon Societies; and Richard M. Kleberg and A. Willis Robertson of the U. S. House of Representatives.

Mr. Silcox opened the Conference with an address forcefully stating the wildlife problem and urging positive action. At a later session he also spoke on the subject "Wildlife Management on the National Forests."

The President's message to the Conference said in part:

"It has long been my feeling that there has been lack of a full and complete public realization of our wildlife plight, of the urgency of it, and of the many social and economic values that wildlife has to our people. This, and the firm belief in the ability of the American people to face facts, to analyze problems, and to work out a program which might remedy the situation, is what impelled me to call the North American Wildlife Conference.

"Our present wildlife situation is more than a local one. It is national and international. I sincerely hope that with the help of good neighbors to the north and south of us, your Conference will unite upon a common purpose and a common program."

NATIONAL FOREST NAMES

By Lee P. Brown, R. 2

Reference is made to John D. Guthrie's article, "Naming the National Forests", in the November 11 and 25 issues of the Service Bulletin. It seems to me that this article is worth consideration. It contains a lot of good sense. Why burden ourselves with a lot of unpronounceable Indian names that mean absolutely nothing to the average Forest Officer and a good deal less than that to Mr. John Citizen?

And another thing, we have, for example, a Mount Hood and a Mount Baker National Forest, names of British naval officers who were in wars opposing this country, but we have none named for American naval heroes. Out of the forest, Perry hewed his fleet with which he defeated the British. Why not call one of the purchase units in Ohio, Indiana, or Michigan, the Perry Forest? There is real imagination, romance, adventure, and daring in Perry's feat. Macbeth was defeated when Burnham Wood moved; Perry took a forest to an inland sea and defeated an enemy. The only place his name is ever perpetuated is on the hull of some destroyer, and then only for a few years at a time.

Several years ago I suggested Hamilton as a name for a National Forest. The man who was basically responsible for the creation of the public domain has never been honored by those interested in the conservation of the resources he saved for the people. Alexander Hamilton brought order out of the conflicting claims of the Original Thirteen States, which were based on indefinite and overlapping crown grants to the western territories. He originated and instituted our system of township surveys of the public domain. He was the original conservationist in the first President's Cabinet. He knew the value of natural resources to a nation and a people and he did his best to save them.

To me the Hamilton National Forest would mean a lot more than the Chauahunkahog National Forest, or however you would pronounce it, even if it is chuckfull of meaning to a Chippewa Indian. Who wants to be an Indian anyway?

GERMAN SEED LAW OF DECEMBER 13, 1934

In order to insure the maintenance and the regeneration of highly valuable, inheritable characteristics of German forests as well as the elimination of stands and individual specimens of inferior race, the Government has established the following law, which is herewith proclaimed:

(1) The forest owner or legitimate exploiter must eliminate stands of poor race and poor individual stems. The Reich Forester will determine the time in which this must be accomplished who is also authorized to prescribe the necessary rules and regulations.

(2) Subsequent to the date set by him, the Reich Forester is authorized to order that only certified seed of certain selected forest species may be used in reforestation, and to prescribe the necessary rules and regulations.

(3) Pine seeds from stands or individual stems from which cone collection is not authorized shall not be used or be given away by the forest owner or exploiter.

(4) Damages which may arise in individual cases from this law or from the regulations of the Reich Forester shall not entitle any one to compensation for such damages.

(5) Infractions of the provisions of this law or of the regulations promulgated by the Reich Forester under it shall be punished by a fine up to 10,000 R. M., or with imprisonment, or both. In addition, whatever measures may be necessary will be carried out at the expense of the liable party.

(6) This law goes into effect on the day following its publication.

Berlin, December 13, 1934.
Der Führer and Reich's Chancellor: Adolph Hitler.
The Reich's Forester: Goring.

YE EDITOR DISCOVERS

Hearings on Forest Service appropriations for the fiscal year 1937 before the Sub-Committee of the House Committee on Appropriations were completed the last of January. The committee seemed genuinely interested in the work of the Forest Service and in its plans and program. One of the major questions raised by the committee was the extent to which Shelterbelt operations could be curtailed in order that the farmers and local agencies could participate to a greater extent in the plantings. Possibly as a result of the discussion, the Shelterbelt will be considered as a phase of the Clarke-McNary activity and the authority in Section 4 modified so as to permit its extension to the Shelterbelt. Following the Forest Service hearings, we understand that the American Forestry Association and other interested agencies appeared before the Sub-Committee to present their views on various phases of Forest Service and allied activities.

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The publication "Forest Trees of the Pacific Slope", by George B. Sudworth, was first issued in October, 1908. About 1914 or 1915 a member of Congress criticised the issuance of such a publication because it was local in character and the cost would fall upon the taxpayers of the whole country. Several other publications of the Department were included in this criticism.

The Committee on Agriculture called on the Secretary for a report. The Secretary in turn asked the Forester to make an explanation. The author of this publication felt so bad about the matter, since the criticism fell on the Forest Service, that he offered to resign if the Forester thought his resignation would relieve the situation. The Forester asked the author to ascertain from the Office of Publication what distribution had been made of the bulletin, both free and for sale. By getting in touch with the Superintendent of Documents, the Office of Publications found that up to that time approximately 1,800 copies had been sold at 60 cents each. He said that requests reached him from all parts of the country, which showed that the interest in the publication was not local. An explanation was therefore made, and the House Committee on Agriculture was apparently satisfied that if so many copies had been sold, the publication must be worth while.

It has been necessary for the Superintendent of Documents to go back to press several times in order to supply the demand for copies of this publication. The records show a steady gain in sales since 1919, there having been, to date, more than 15,400 copies sold.

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At its meeting on January 30, the National Forest Reservation Commission approve the purchase of 116,694 acres of land for National Forest purposes. Distributed regionally, the approvals included 4,376 acres in New England, 53,053 acres in the Appalachians, 22,309 acres in the Piedmont section of South Carolina, 30,908 acres in the Southern Pine belt, 3,503 acres in the Lake States, and 2,545 acres in the Caribbean National Forest in Puerto Rico. The total cost of the lands approved was $513,369.45.

No action was taken on proposed purchases of forest land in Iowa, Indiana, and Ohio, nor in the Davis County and Provo Units in Utah, additions to the National Forests authorized by the Commission last year to facilitate reforestation, watershed protection and erossion control in a mountain area where the runoff on overgrazed slopes has caused serious floods in recent years. The Commission decided to postpone action on these units until additional funds become available for forest land purchases.

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The Shelterbelt Report has just been issued. This publication of 200 pages is an outstanding document not alone for its contents but for the manner in which it has been prepared. Printed in good sized type, on heavy 9" × 12" paper, with numerous illustrations and maps, the report is a fine example of printer's art, its format and arrangement being unusual for Forest Service publications. The report has articles in it by Assistant Secretary of Agriculture M. L. Wilson, F. A. Silcox, Raphael Zon, C. G. Bates, L. F. Kneipp, A. A. Simpson, John H. Hatton, and other members of the Forest Service. Other sections included are by F. A. Hayes of the Bureau of Chemistry and Soils, Dr. J. M. Aikman of Iowa, and Dr. G. E. Condra, State Geologist of Nebraska. Because of the limited edition of the report and its cost, copies are being distributed very sparingly.

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Sprouting may be readily prevented by Diesel oil. On the Ponderosa Way - that famous 400 mile long firebreak - the California Forest Experiment Station has been studying methods of sprout prevention. Sodium arsenite kills stumps and prevents sprouts but is dangerous to use because so deadly to livestock and game. Diesel oil has been found to be equally effective, costs slightly more, but does not attract animals and hence is harmless.

Oil treatment requires several simple operations: breaking the sprouts, hacking the roots, root collar and stump, and spraying oil on the living tissue. The oil needs a special sprayer to coat the stump crown. On the Ponderosa Way, one oil-sprayer keeps up with six axe men.

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OFFICIAL JOURNAL PRINTS RESULTS OF VISIBILITY RESEARCH

Gerge M. Byram, the inventor of the haze meter, widely used by lookouts in Region 6 to measure visibility conditions, has two articles in the December 1935 issue of the Journal of the Optical Society of America which he wrote while making a study of visibility at the Pacific Northwest Forest Experiment Station. These articles, "Visibility Photometers for Measuring Atmospheric Transparency" and "A Photoelectric Method of Measuring the Transparency of the Lower Atmosphere", describe several new devices for measuring atmospheric transparency and explain the fundamental theories on which they are based. Publication of these articles in this Journal is evidence of the scientific value of Byram's study, an outstanding example of the contribution that specialists in other sciences can make to forestry.

RADIO AIDS SNOWBOUND COUPLE

"The worth of the radio units recently installed by the Wyoming National Forest, linking outlying ranger stations with each other and the main office at Kemmerer, has again been proved this week. Lowell Woods, who is the Ranger stationed on Elk Creek at the head of Horse Creek, an isolated and snowbound section of the country west of Daniel, was married a short time ago and his wife is ill with septic sore throat. No means of communication exists with the outside world except by short wave radio and Mr. Woods reported the illness of Mrs Woods, giving the symptoms and asking for advice.

"At the beginning, members of the Kemmerer office, principally Clark Miles, broadcast methods of treatment and prescribed medicine at frequent intervals during the day. When the case appeared more serious, the camp doctor of Fremont CCC Camp, Dr. Reed, prescribed treatments and later, local doctors did the same over the station from Kemmerer. Recent reports from the scaler cabin report that Mrs. Woods is feeling much better.

"It had been planned to break out the road to the cabin with teams and tractors and a relay of horses is yet held in readiness to go to the cabin and bring Mrs. Woods out in case it is necessary. Men will be equipped with snowshoes to penetrate to the isolated cabin and much equipment will be used to break open the road in case drastic action is demanded. The snow in this locality is five to six feet deep." - R-4 Bulletin.

FROM "UNCLE SAM'S FOREST RANGERS" FAN LETTERS

"Dear Forest Rangers: We congratulate you on your anniversary of four years program on the air - as your announcer said on yesterday's program. It is not only interesting entertainment for your listeners but gives us an idea how valuable your work as Forest Rangers - to keep and preserve forests. Jim Robbins' talk was splendid. We have grown to love him and his wife Bess."

"M. Maris and family,
Chicago, Illinois."

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"Our sincere appreciation of the program of Forest Rangers which we did especially enjoy and appreciate."

"Frank D. Rowe, Sup't. of Schools,
Warren, Maine."

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"Dear Rangers: Just a few lines to tell them I am sure glad to know that they will be on the radio for another year, for that is one program I sure don't like to miss and always look forward to."

"Effie Moyer,
Northumberland, Pa."

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"National B.C. Co.: I look forward to Friday just to listen to your Forest Ranger program. I know there are others than myself that love the great out-door life and what it brings to you.

"Every day in the week you have lots of music that we all love, but only have a little 15-minutes with the Rangers once a week. They no more get started and get you all worked up by longing for the summer months to return again, than they are off the air.

"Let Jim Robbins and his cast of players stay on the air longer, to educate some of our city fools who go to the woods to shoot at anything and build fires and drive away from them when they spread."

"Mrs. Weber
Duluth, Minn."

PUNISHED FOR CAUSING FOREST FIRES

During the year just ended, violations of smoking and campfire regulations in Region One cost 32 persons more than $300 in fines as well as a number of jail sentences. The jail sentences for the most part were suspended upon payment of the fines. Prosecutions were in State courts, under the State laws of Idaho or Montana, in whichever State the offense was committed.

There were 18 convictions of persons who had failed to extinguish campfires before leaving them, and 14 were convicted of violating the smoking regulations (the Idaho law prohibits the throwing of lighted cigarettes or similar burning matter in forested areas).

From R-1 News Release.

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FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

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> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 5 Washington, D. C. March 2, 1936

FOREST SERVICE GRAZING POLICY

Several conferences have recently been held in Washington between the Chief of the Forest Service and representatives of the American National Livestock Association and the National Wool Growers Association. These conferences were the outgrowth of Mr. Silcox's attendance at the meetings of the two national associations at Phoenix, Arizona, and Salt Lake City, Utah, and of requests from several Western Senators and Representatives (all of whom were invited to attend) that they, too, might be heard. Discussions were on the grazing policy for the National Forests.

The conferences emphasized the difficulty of attempting to harmonize the views and demands of present permittees who desire a vested grazing right (which is what Senator Ashurst declared they should have in order to freeze present conditions without reference to changed or changing social or economic conditions), with the demands of a very large number of residents who, because of changed conditions want and need National Forest grazing privileges. The situation is further complicated by the fact that National Forest administration must provide for public uses other than grazing, and that there is often a close and vital relationship between National Forest grazing and grazing on nearby areas of public domain which are now being put under administration by the Grazing Division of the Department of the Interior.

After thorough consideration of all angles of the situation, an agreement was reached during the sixth day of the conference. The following statement is issued by Mr. Silcox:

"The basic function of the National Forest system is to help bring stability and security to the social and economic structure of communities dependent upon its resources and to the Nation as a whole. That is why National Forest resources are conserved through use rather than being withdrawn from use.

"Forage is one of many National Forest resources. Its many uses – by domestic stock, by wildlife, and to help regulate the flow of streams, for example – must be coordinated and correlated with uses of all other resources by such close cooperation of all agencies as will provide the greatest good to the greatest number of people in the long run.

"National Forest forage is vital to that livestock industry which forms an integral part of the social and economic welfare of the West. Since 1905 it has been the policy of the Department of Agriculture through the Forest Service to provide for such correlated uses of forage as might bring some degree of security and stability over the years to the Western livestock industry and the individuals and communities dependent upon it. This policy will be continued.

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"Gradual improvement of the National Forest range resources is vital to stability for the Western livestock industry. In its administration of the uses of forage as a National Forest resource - an administration which is understood to have proven generally satisfactory to the livestock industry of the West during the past 30 years - the endeavor has been to provide to each permittee equitable treatment in the distribution of any increased carrying capacity, with a minimum of adjustments and preferences given where possible to established permittees.

"This is in recognition of the need of safeguarding the investments and equities of present users of the range, and of improving credit facilities, to the fullest possible extent consistent with the various uses of forage as a National Forest resource and the welfare of dependent communities. This policy will be continued.

"Administrative policy must, however, clearly recognize the complexity of climatic, social, economic, conservation, and other factors involved and must make provision adequately to meet changing conditions. It is impracticable to make such provisions under a policy that would attempt to freeze grazing privileges to present permittees or to specific ranch property for all time to come. I cannot, therefore, approve such a policy, although I do believe it possible to fix the privileges on a fairly permanent basis for a specified period of reasonable duration.

"Our present economic survey, to which representatives of your two associations have agreed, was undertaken for the purpose of developing better principles for the distribution of grazing privileges than the ones now used. The economic survey recognizes that the Forest Service policy of distribution of privileges is open to attack both by those who now enjoy those privileges and by those who are desirous of securing them, and that the policy of the Forest Service is to give stability and yet leave a sufficient margin of flexibility to meet changes in economic conditions. It recognizes, too, the desirability of such a reclassification of ranges as may make it possible definitely to consider meeting intensive demands for a few head of stock per permittee by allocating those demands to such range as is not needed for general commercial livestock production. The Forest Service must, then, make such reservations in any term permits issued as will permit reasonable application of the principles developed by the survey.

"Upon my recommendation, the Secretary of Agriculture has approved the following:

"1. Term permits for the period 1936 to 1945 inclusive will be issued for preference numbers of stock within the maximum limit and the commensurateness of established permittees. No reduction in preference numbers of livestock will be made in 1936. Each permit will contain a clause specifying the reduction percentage that can be made for distribution. Such reduction, when taken together with reductions for distribution made in 1935, shall not exceed 20 percent in any case for the term permit period 1936 to 1945 inclusive. No greater reduction than 5 percent will be made for distribution in any one year.

"2. The maximum reduction that can be made for any or all purposes shall not exceed 30 percent, or 15 percent in any one year, for the period 1935 to 1940 inclusive. At the expiration of the year 1940, such reductions for protection can be made in term permits as the circumstances justify.

"3. Transactions involving protective and distribution reductions will be kept separate. Increased carrying capacity resulting from protection cuts will be recognized as belonging to the allotment or other unit on which the cut was made and will be distributed among the users of that allotment or unit on an equitable basis.

"4. Before making any adjustment under this program, the details involved will be taken up with the local stockmen and their views given full consideration before conclusions are reached."

HISTORICALLY SPEAKING

This year marks the sixtieth anniversary of the Government's first step in forestry, as well as the thirty-first birthday of the Forest Service.

It was on August 15, 1876, that Congress authorized the Commissioner of Agriculture to engage a "man of approved attainments ... with a view of ascertaining the annual amount of consumption, importation and exportation of timber and other forest products, the probable supply for future wants, the means best adapted to their preservation and renewal, the influence of forests upon climate and the measures that have been successfully applied in foreign countries, or that may be deemed applicable to this country, for the preservation and restoration or planting of forests..."

The man selected for that large order was Dr. F. B. Hough, who had previously urged the Government to take this course. The new Commissioner's work was mainly statistical at first, and no provision was made for the actual management or protection of the timbered areas of the public domain.

The next decade marked a period of development, during which the Forestry Commission gained permanent status as an administrative division of the Department of Agriculture. Much valuable forest data was accumulated and correlated. Toward the latter part of this period, the Commission appointed agents to spread the knowledge thus gained about tree planting and care. In 1882, the Senate Standing Committee on Agriculture had become the Committee on Agriculture and Forestry, indicating the strong trend of Government interest in the subject. Then, in 1886, the Commission became a permanent Division of Forestry under Dr. B. E. Fernow, one of the foremost experts on forestry, and the first to hold the title of Chief.

The next vital point in the history of American governmental forestry was reached on March 3, 1891. On this date was passed the act which authorized withdrawal from the public domain of timberland, to be known as Forest Reserves. The following September, President Harrison, under the provisions of the bill, proclaimed the Yellowstone National Park Timber Land Reserve, and the White River Plateau Timber Land Reserve in Colorado. By September, 1893, there had been set aside by Presidents Harrison and Cleveland a total of more than seventeen and a half million acres. About this time there was strong opposition to the withdrawal of these lands, principally in the West, where many people felt that such a move meant the locking up of the forest resources of these areas. But a significant change came in 1897, when, by act of Congress, power was given to the President to provide for the regulated utilization of the reserved forest lands. This made possible the stewardship of a resource which was to be made permanent and continuing by scientific utilization, and was the point around which the existing Forest Service was built.

In 1898, Gifford Pinchot was named head of the Forestry Division, and on February 1, 1905, the Forest Service was organized in its present form, during the administration of President Theodore Roosevelt. At the same time the reserves were transferred to the Department of Agriculture for administration. This transfer had been urged for several years, since the Government's technical forestry agency had been in this Department while the Federal forest lands were under another Department's jurisdiction. Secretary of the Interior Hitchcock said in his Annual Report for 1901, "Forestry is properly an agricultural subject. The presence of properly trained foresters in the Agricultural Department. . . makes the ultimate transfer. . . essential to the best interests both of the Reserves and of the people who use them." In 1908, the "reserves" were renamed "National forests".

With the development of the Forest Service, forestry came into the status of a new American profession. During President Theodore Roosevelt's Administration the National Forests were greatly extended. A period of intense progress culminated in 1911 in the passage of the Weeks Act which, because it enabled the Federal Government to acquire by purchase forest land valuable for protection of watersheds, launched a new movement toward a definite National Forest policy. Under this act important Eastern National Forests came into being. These areas were strategic points for forest fire prevention, and proved valuable for the demonstration of scientific forest management, reforestation, and development of wildlife and recreational values. They also provided a start toward conservation of our national stock of hardwoods.

The next highlight in forestry history was the Clarke-McNary Act of 1924. This, through its authorization of appropriations for cooperation with States, aided protection of timberlands from fire and encouraged forest-growing by farmers. It was followed in 1928 by the Woodruff-McNary Act and the McSweeney-McNary Act, both of which broadened the scope of activity launched by the Weeks and the Clarke-McNary Acts.

During the depression the forests were called upon as a vast reservoir of relief work. On April 17, 1933, the first Civilian Conservation Corps camp was established.

With the man-power and the funds made available through the CCC program and through emergency allotments, the long-term program of the Forest Service for the protection and improvement of the Nation's forests has been advanced by many years.

THE FIRST RANGER STATION

By Former Supervisor J. W. Lowell

Rain! Rain! Rain!

It had been pouring for three days and nights without intermission when H. C. (Hank) Tuttle, recently appointed Forest Ranger, drew up with his saddle horse and pack mule under the protecting branches of a large western yellow pine tree at what is now the site of Alta, Montana, on the West Fork of the Bitterroot River in Ravalli County. There were no buildings on the West Fork at that time save a single prospector's cabin.

Hank slid from his horse, dropped the bridle reins and sought the shelter of the huge pine.

"Well, this is the place I was ordered to meet Wilkerson, that new ranger," he soliloquized. "I suppose he is lost or bogged down on his way over the divide. A fine idea to send us two out here fifty miles from nowhere with no instructions except to patrol the Bitterroot Forest Reserve, watch out for timber trespass, and put out fires. A fine chance we would have of stopping any fire with an ax and a shovel if it ever gets dry. Why, I've seen fires in this part of the country covering a thousand acres and traveling a mile an hour in the wind. It would take hundreds of men and thousands of dollars for tools and food supplies to make even a start at stopping one if it once gets started..."

"Hello! Hello!" A strong, cheerful voice came from up the creek.

Hank turned and saw almost his counterpart, both in man and horseflesh, coming down the muddy trail. The newcomer dismounted easily, stretching out a strong hand.

"I am Wilkerson, generally called 'Than,'" said the newcomer.

"I am Tuttle, better known as 'Hank,'" explained the other.

Still it rained. Packs were wet clean through although covered with canvas.

"Well, I guess it's never going to quit," offered Than. "We better try and get our stuff off and under cover of some kind."

"I reckon I've got a partner that knows something," thought Hank.

So they went to work, each understanding and doing his part. Soon a roaring fire was going, a pole set against a tree with a canvas thrown over it, and their supplies unpacked and stored under this makeshift shelter. As soon as the horses and mules were hobbled and put on feed for the night, the men were enjoying their bacon, fried potatoes, baking powder biscuits, and coffee. And as they satisfied their hunger, they talked of their work.

"We won't have much fire in the woods this year with all this rain in June, and I don't believe there is anyone cutting timber around here," remarked Than.

"Maybe so," answered Hank, "but I just got orders from the inspector that if there wasn't anything else to do, we could pile and burn all the windfall and brush, especially along the roads. Guess we'll find enough to keep us busy."

"I wonder how much he thinks we could accomplish in clearing up the 500,000 acres we are supposed to be looking after. These fellows in Division R of the Interior Department don't know what this is out here," said Than. "They better come out and look over the country and then get Congress to let us spend a little money to hire help and get a little equipment with. I don't see what they expect only two of us to accomplish in all this big, broken, timbered country - especially when we are furnishing our own tools, horses and grub and working for $60 a month. But let's stay with her, do the best we can, and some day there will be a real understanding of what is needed to protect and handle this great timbered country." Conversation lagged while both enjoyed their after-meal tobacco - Than his usual pipe and Hank his chew.

"I believe the first thing we should do is to build a cabin right on this flat," remarked Hank. "We surely need some kind of shelter for weather like this, and I think this would be a good location for a station. There is some fine lodgepole in that first draw up the creek, and maybe we can borrow a work horse and harness to drag them in from Pete Bennett, the old prospector down the canyon."

"I know Pete," added Than, "and I believe that would be a fine idea."

And so these two rangers went to work on the following morning, and by hard, steady application, in fifteen days had completed the first ranger station building constructed by Forest officers on a National Forest. It was a one-room cabin, with peeled, lodgepole log walls, a split puncheon floor, roof of poles with layers of lodgepole bark and then a foot of dirt. They had to buy the hinges, nails and the one window which they were able to afford from their own funds as the Government at that time had not appropriated any money for such purposes. The building was completed in June 1899. Than insisted that the American flag should fly over the new structure; so he made the long trip of one hundred miles to Grantsdale and return, bringing a brand new flag with him. Hank had a flagpole erected at one corner of the cabin, and together they hoisted the American flag over the first ranger station - the Alta cabin.

Although Tuttle remained with the Service only a year or so after building the cabin, our old friend Than continuously worked at his job. He became grizzled around the temples, but remained a sturdy, hard-working ranger, keen in all things pertaining to the administration and protection of the National Forests. He is now retired on a pension, having served nearly thirty years as a Forest Ranger.

Two years ago, Than and I visited a modern ranger station.

"Well, this looks like something," said Than. "What a difference in things now and thirty years ago. We have lots of lookouts to spot fires, firefighters with modern equipment, thousands of miles of trails, roads and telephone lines. It seems a long step to the present time when each ranger handles six to a dozen men as protection guards, has his traveling expenses paid, and a decent house to live in.

"Through the years I did my best to bring these things about," remarked Than, "and there is just one thing now I would like to see done. I wish the old cabin at Alta could be fixed up and preserved as the first ranger station."--From R-1 Bulletin.

YE EDITOR DISCOVERS

Work has been under way for most of the winter on the preparation of detailed plans for three National Forest Resettlement projects, the funds for such work having been made available by Dr. Tugwell late in November. These plans include social and economic data as needed to establish the feasibility of the projects, and detailed information on the acquisition and development of lands and the construction of homes for settlers. Dr. Tugwell has already authorized the acquisition of resettlement land and the employment of a few men on the land clearing and rock quarrying. He has made funds available to the Forest Service for such work in advance of the approval of the detailed plans, which will soon be ready for submission to him.

The three projects, which are located on the Ottawa, Chequamegon and the Cumberland Units, respectively, will involve the establishment of 219 home units, varying in size from less than an acre to 20-acre units, for families residing on submarginal farms, and in the villages and towns in the vicinity of these projects.

Dr. Tugwell has asked for a report of the additional projects for which plans could be prepared, and the amount of funds needed for the planning work. On the basis of experience gained in planning these three projects, it is felt that we will be able to prepare additional reports with a minimum of lost motion. It is Dr. Tugwell's desire to have a number of actionable reports on hand in the event additional funds are made available for resettlement work. The three projects now getting started, and the additional ones to be planned by the Forest Service, are of course located within and adjacent to National Forests, and are closely related to the problem of land use adjustment and the integration of major forest resources with minor agricultural resources in the forest regions.

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The fire deficiency appropriation for the fiscal year 1936 in the amount of $1,276,709 was approved by the President on February 11.

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Aided by ERA funds and ERA labor, progress is being made on the installation of a watershed study at the lower elevation of the Sierra National Forest. This project in Kings River drainage is primarily to obtain data in the Sierras to supplement that obtained in Southern California on the effect of cover on runoff conditions. The cover on this project is very largely of the open woodland type with some brush on the north basin slopes. Three dam sites have been approved for construction including structures twenty feet high.

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Encouraged and assisted by "P.K.", the School of Public Affairs of The American University, Washington, D.C., has added to its curricula an "In Service" Training Program for Federal Government Employees. Classes are under the supervision of the University faculty, with lectures by outstanding leaders in and out of the public service. Among the courses being offered during the second semester (January 28 to May 29) of the present academic year of especial interest to members of the Forest Service are:

Survey of Public Personnel Management
-Dr. Emery E. Olson
(Given in cooperation with the Department
of Agriculture Graduate School)

Problems of Public Personnel Management
-Oliver C. Short, Exec.Asst.
to the Director of the Census.

Executive Management and Supervision
-Dr. Emery E. Olson and
Mr. Peter B. Keplinger
(Given in cooperation with the Department of
Agriculture Graduate School).

A brief outline of the subject-matter of the latter course follows:

I. Methods of Approach
II. The Relationship of General Organization to Management and Supervision.
III. Work-Planning, Scheduling and Follow-Up
IV. Job Analysis and Time Studies
V. Job Specifications
VI. Standard Practice, Instructions, Routine and Procedures
VII. Administrative Control (records, reports, inspection, etc.)
VIII. Coordination and Cooperation (including relationships arising out of line and staff functions)
IX. The Process of Executive Decision
X. Performance Records (group and individual rating scales, unit costs, etc.)
XI. Incentives and Employee Relations
XII. Training
XIII. Bases of Leadership.

The Director of the University has written "P.K." a letter of appreciation, in part, as follows: "In behalf of the School of Public Affairs of the American University, I am delighted to have this opportunity of expressing to you our very deep appreciation for your thoughtfulness in assisting us in connection with our 'In Service' Training Program for federal employees."

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The Arkansas State Forestry Commission reports that since September 1935, 166 of its field employees have been studying Forestry through the medium of a correspondence course. The course was offered as a result of frequent requests for information by the field men and enrollment in it is entirely voluntary. The Commission plans eventually to prepare six such courses, each course to consist of from eight to twelve lessons.

APPRECIATION FROM A NATURE LOVER

The following statement is taken from a letter received from Mr. Vernon J. Brown, Editor and Publisher of the Ingham County News, Mason, Michigan, and a member of the Michigan State Legislature. It is very gratifying to receive a statement of this type, coming as it does entirely unsolicited, and from a man who has traveled rather extensively in various parts of the United States:

"The writer is a Michigan newspaper publisher on vacation out in the Southwest. He is prompted to write you because of certain impressions gained as he has motored through several of your projects in this region.

"I am impressed with the artistry exemplified by your foresters and rangers in making available to the people of this country the wonderful scenic areas which have been intrusted to the care and control of your organization. These men have the touch which makes available the trails, the rest spots, the necessary conveniences for recreation and enjoyment, all without unduly disturbing the natural surroundings.

"Especially noticeable is this in the Sabino Canyon project which I had the great pleasure of visiting a couple of days ago. Here every safeguard appears to be provided and every convenience made available, all with due consideration for preservation of the scenic beauties and grandeur which this area holds. In my travels I have witnessed excruciating work in which the engineer in charge appeared to be impressed with his ability to improve over the work of the Creator. This is not true in this locality. Your men have faithfully approached their work of merely making these natural wonders available, yet evidently having in mind always the idea of preserving nature and harmonizing their own work with it.

"Permit me to compliment the service and through you, the men in charge, for their remarkable skill and artistry." - From R-3 Bulletin

WHO DONE IT?

Mrs. C. S. Hatch of Laramie, Wyoming, telephoned at 11:15 a.m. and stated that she had been listening to the Forest Rangers on the NBC and heard the statement that Mt. Hood Lookout, 11,800 feet, is the highest lookout in the United States.

She asked whether our lookout on Medicine Bow Peak at 12,005 feet should not be considered higher than Mount Hood.

Mr. Editor, there is just a lot we could write about this very apparent injustice, so we will simply report the fact as above, leave the editorializing to you, and return to our magnitudinous other labors of higher priority.

Yours
(Signed) L. E. Coughlin

(We understand the Medicine Bow is to be given proper recognition in a forthcoming Forest Ranger program. - Ed.)

CCC CAMPS FOR JAPAN

Japan is the latest country to use the American CCC idea in the struggle against unemployment. The Japanese Bureau of Social Affairs has established a system of camps for men engaged on relief work. The object of camps is to give the unemployed the instruction they require particularly with a view to occupational retraining and adjustment.

Approximately 90,000 unemployed workers without means have been drawn from the six largest cities of Japan. They will be engaged on relief projects for at least six months and quartered in camps. The authorities will do their best to provide men leaving the camps with employment corresponding with their newly acquired duties. Special steps will be taken, however, to encourage the men dishcarged from these camps to emigrate. - Pennsylvania Service Letter.

TREE PLANTING IN ANCIENT EGYPT

Apropos of the tree planting now in progress in various parts of the State, the Alabama Commission of Forestry points out that the transplanting of trees was a feature of ancient as well as modern forestry. While forestry appears to have been practiced as far back as 3500 B. C., the earliest recorded instance of operations involving the transplanting of trees from their place of origin to a foreign land is found in the account of an Egyptian expedition to the Land of Punt now known as Somaliland adjoining the present Empire of Ethiopia, during the reign of Queen Hatasu of the Eighth Dynasty. The object of this expedition seems to have been to explore the lands from which incense was brought, and the history of the enterprise is depicted on the walls of the Temple of Hathor at Deir-el-Dahari. It reads: "Laden was the cargo to the uttermost with all the wonderful products of the Land of Punt, and with the different nut woods of the Divine Land and with heaps of the resin of incense, with fresh incense trees, with ebony," and so on. It is said that thirty-one incense trees, packed in tubs, were carried on board the ships, and that it took six men to carry each tub. A later inscription, dated about 1200 B. C., quotes Rameses III of the Twentieth Dynasty: "I have planted trees and shrubs to the end that the people should sit under their shade".

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>
> Theodore Roosevelt

Vol. XX No. 6 Washington, D. C. March 16, 1936

LIBRARY

THE VICISSITUDES OF LAND ACQUISITION

By L. F. Kneipp, Washington

As an essential feature of the emergency program which took form in the spring of 1933, the program of land acquisition under the Weeks Law and the Clarke-McNary Law assumed proportions far beyond any earlier dreams of its sponsors and executors. At single sittings, the National Forest Reservation Commission approved programs of purchase far exceeding the highest annual records of preceding years; and in a single year passed on greater acreages than had been approved during the entire 22 years before.

Naturally the extensions of the purchase work into new territories were a dominant feature of the program. New purchase units spread like mushrooms throughout the eastern half of the country and in many States and parts of States where previous circumstances had been negative to their establishment. Consolidations, new combinations of units into administrative entities, etc., make it difficult to keep track of the actual number of purchase units existing on any fixed date, but according to the record the number increased from 47 to 97 in a little over two years.

Those units which were established represented, however, only a portion of those which were recommended for establishment. The Western Regions got into the game and presented numerous intriguing possibilities for effective purchase work which markedly would contribute to actual sustained yield management and to more efficient and economical administration of existing forests.

After three years of previously unbelievable activity in the field, there exist today 86 specifically designated purchase units with a gross area of 52,795,744 acres, within which the United States holds 3,753,433 acres reserved from the public domain, 253,756 acres acquired through exchange, and 15,218,371 acres purchased or in process of purchase. The amounts actually disbursed for this property aggregate $56,594,560.

Of the remaining area, 9,462,000 acres is for the moment classified as nonpurchasable. The area therefore remaining to be purchased is approximately 24,108,000 acres. The estimated cost of this land is approximately 120 million dollars plus an additional 15 percent to cover costs of purchase.

Preponderant sentiment, both in Washington and in the States containing the purchase units, appears strongly favorable to a continuation of the purchase work; but the present financial circumstances of the Government seem strongly unfavorable. The further financing of the work by additional allotments from emergency appropriations is becoming increasingly improbable. A strong group of members of the House of Representatives therefore initiated action to continue the work by specific appropriations, to which end they succeeded in entering in the Agricultural Appropriation Bill an amendment appropriating 25 million dollars for the purchase of forest land during the fiscal year 1937, with the proviso that 10 million dollars of that sum would become available upon approval of the bill. The vote on this amendment was 78 favorable to 59 opposed. Prospects were glowing, since there was no reason to believe that the Senate would object to the item. The pleasure was short-lived, however, because on the following day the House of Representatives deleted the amendment by a vote of 101 to 48.

Thus, for the moment, the acquisition program is on the knees of the gods. Sentiment in favor of its continuation, both in Congress and outside, from all appearances predominates over any negative sentiment. The obstacle to uninterrupted progress is mainly the question of financial ways and means. Sooner or later that question will be solved, and the program will go forward as planned. At present, however, it seems to have come to a full stop.

FOREST WILDLIFE MANAGEMENT IN NEW ENGLAND

(Excerpts from the Report of the Subcommittee on Fish and Game Management, New England Section, Society of American Foresters, published in Journal of Forestry for December 1935)

Forest management plans are, of course, nothing new; but such plans considering wildlife, its potentialities and needs, have only been outlined in the past few years, during which recreational developments have assumed such increasing importance.

The need for considering both the animals and the timber, giving each its proper place, is everywhere apparent. One finds, on one hand, the idea spreading that pure coniferous plantations have no game food in them, so all such plantings should be avoided as a detriment to the game range. This entirely neglects the timber value and the great value of conifers well interspersed with the other types as cover for game. Also, spruce, balsam, and especially white cedar are important winter foods of deer in the more northern sections. On the other hand, most forest management takes no account of the needs of game. A grapevine which could furnish food for a covey of game birds well into the winter is cut down because it is overtopping a tree, no matter whether the tree is valuable or not.

So far, our concern about game has been mostly in trying to guess whether it was holding its own and in wondering what restrictive legislation to foster next. We have not considered what we actually had for breeding stock, how many adults could be safely removed without depleting this breeding stock, whether the population was increasing or not, and what necessary environmental elements need changing for best results with game.

The recent national awakening to the need for increasing recreational facilities has focused considerable attention on wildlife and its needs. Work has been done here and there to improve this factor or that for certain species, but the complete picture of all the needs has seldom been developed.

Realizing that each tract of forest is a case in itself, requiring a particular treatment, we have attempted to outline in general terms the basic information needed for efficient management in our region.***

Regulation of the kill of game is probably the most important problem in the management of our native species. It is also the one in which human relations figure most strongly. American hunting since colonial days has been based on the fact that wild game belongs to the State and becomes the property of anyone who obtains possession of it under the provisions of the State laws. With the intensive hunting which prevails over central and southern New England, it is obvious that attempts to build up a population of game on an area where hunting is not restricted would often be fruitless. The only answer in such cases seems to be in a limitation of the number of gunhours of hunting allowed under a permit system. Such systems have been successfully used on many projects and are being used in some areas by the Forest Service in game management work. ***

Under New England conditions, food is very apt to be a limiting factor. It is true that some native species, such as the ruffed grouse and deer, can get through the winter by budding and browsing, but one only needs to consider the place taken by apples in their food as long as these are available to appreciate how much such a food means in preparing the animal for the winter period, with its poor diet. The effect on game of such work as that done in some sections by the C. W. A. men in hunting out and cutting down wild apple trees is obvious.

Any game management plan should provide that valuable food plants should be favored during silvicultural operations. Also, much harm to the game range can be avoided by leaving food plants wherever possible in trail, road, and fire line construction.

Where funds for such work are available, shrub and tree plantings for game food and cover offer attractive possibilities for waste areas, roadsides, fire line borders, etc. ***

In conclusion we may say that plans for game management, no matter how well worked out, will produce little in the way of results unless those who apply its provisions are interested in game and try to understand its needs. Since forest growth and forest animals are inseparable, the forester has in his activities the means of either favoring or hindering the increase of game species. If an attempt is made to work out the life histories and peculiarities of the animals on a forest and to improve the conditions which are holding back their increase, great strides can be made toward more complete and profitable land use.

NAMING THE NATIONAL FORESTS

By Charles DeMoisy, Jr., Uinta

The discussion opened up in the Service Bulletin about "Naming the National Forests" might well be pursued further, at least to the development of a plan of correcting a few misnomers and anomalies that have already been perpetuated too long.

Take for instance the National Forests of Utah: there are 8 of them and only 1, the Ashley, seems to have a fitting and distinctive name. General Wm. H. Ashley did explore this region in 1825. The Wasatch range of mountains extends through 3 Forests, any one of which might as justly claim the name.

Originally the Uinta Forest included the Uintah range of mountains, but as long ago as 1908, all of that mountain range was transferred to the Ashley and Wasatch Forests, the former Forest thus losing all claim it might have had to the name.

How can natural or place nomenclature be followed, as one writer pleads, when a National Forest contains part of two or three mountain ranges, several rivers or streams, extends into 4 or 5 counties and is laid out as to its exterior limits for administrative reasons rather than topographic features.

What better plan can be suggested than Guthrie's of naming National Forests after early explorers, particularly those who first discovered or described the section now designated as a National Forest.

Following this idea, the Uinta might better be named the Escalante National Forest after the early Spanish explorer and first white man of record to visit this section. He entered the eastern boundary of what is now the Uinta Forest in Strawberry Valley, which he called the Valle de la Purisima, travelled up Mud Creek over the divide and down Diamond Fork its entire length, describing "its beautiful bends and good pasture suitable for sheep and cattle raising." His classification made over 200 years ago still stands, because since settlement of this section its principal use has been, and remains today, livestock grazing. He proceeded down Diamond Fork past 3 sulphur springs into the main Spanish Fork Canyon with its 3 hot sulphur springs where he encountered almost impassable barriers through the narrowest part of the canyon now traversed by a trans-continental railroad and U. S. highway 50.

Near the mouth of Spanish Fork Canyon he encountered difficulties with the Indians, who burned the grass that there might not be any feed for the horses of the exploring party. Despairing of finding a route to the Pacific Ocean, he turned south, skirting the Nebo division and back by the "Crossing of the Fathers" on the Colorado River to his mission base in New Mexico.

HEARTWOOD IN SECOND GROWTH LOBLOLLY PINE

By A. L. MacKinney, and L. E. Chaiken, Appalachian For. Expt. Sta.

Heartwood may be undesirable in southern pine pulpwood used for the manufacture of newsprint paper. Researches by the Pulp and Paper Laboratory of the Industrial Committee of Savannah, and by the Forest Products Laboratory, have shown that heartwood is not digested satisfactorily by the sulphite process and when it is present in large quantities, produces an objectionable color in ground wood pulp. Since it appears probable that the newsprint industry will develop in the loblolly pine region, it may be desirable that the pulpwood grower know when stands of second-growth loblolly pine should be cut to obtain pulpwood containing a limited amount of heartwood.

This article gives a preliminary summary of a recent study of the factors affecting the amount of heartwood present in second-growth loblolly pine trees. The results are based on detailed study of 680 trees growing in different second-growth stands in the Coastal Plain of Virginia, North Carolina, and South Carolina.

Although the formation of heartwood starts at ages between 14 and 23 years, practically no trees under 20 years of age contain an appreciable amount. From the available data no reason can be given why some trees start heartwood formation earlier than others.

The majority of the trees having heartwood showed a maximum heartwood diameter at the stump, but there were 23.5 percent with heartwood diameters smaller at the stump than at some point higher up the stem. There is no apparent explanation for this variation because it is not correlated with age, size, dominance, or rate of growth.

The amount of heartwood in the trees studied varied from none to 10 cubic feet. The smallest amounts of heartwood occur in young trees while the largest amounts are in large, old trees.

The amount of heartwood per tree is of relatively little importance to the grower and user, the proportion of heartwood to sapwood being much more pertinent. Investigation of this relationship shows that the proportion of heartwood varies directly with age and indirectly with rate of growth. (Periodic diameter increment - 10 year period.) Thus for a given age the fast growing trees have a relatively small proportion of heartwood, while old trees growing at the same rate as younger trees have a larger percentage volume of heartwood.

Since it is universally accepted that the average rate of current diameter growth of trees is higher in young stands than in old stands, in open stands than in dense stands, and on good sites than on poor sites, we can reason that trees growing in open stands on good sites will have less heartwood in proportion to their total volume than those growing on poor sites in dense stands. With this in mind, it is possible to arrive at an approximate rotation age at which trees will contain a certain average percentage of heartwood. Thus, if it is desired to grow loblolly pines having practically no heartwood, the average rotation age should be approximately 20 years. If, however, heartwood amounting to 5 percent of the volume is acceptable, it is fairly safe to say that on the average site the rotation age should not exceed 45 years. On particularly good sites or in very open stands this could be raised to 50 years, while on poor sites or in very dense stands, the pulpwood should be cut at an age between 30 and 40 years.

These rotation ages are only approximate and are recommended only on the basis of heartwood as a limiting factor in the growth of loblolly pine for pulpwood. They do not take into account other factors such as the age at which loblolly pine stands should be cut to give the highest net return, the possible desirability of cutting some trees for other products, the effects of wood specific gravity on pulp yields, etc.

REPORT OF N. R. B. LAND PLANNING COMMITTEE

By E. A. Foster, Washington

One section (IX Wildlife) of the 1934 report of the Land Planning Committee of the National Resources Board has finally been received from the Public Printer and is being distributed to Regions and Experiment Stations. Sufficient copies are being sent to Regional Foresters for distribution of one copy to each Forest.

This report (which was summarized in Part II of the National Resources Board Report of 1934) consists of 11 sections as follows:

Part I	General Conditions and Tendencies Influencing the Nation's Land Requirements.
Part II	Agricultural Exports in Relation to Land Policy
Part III	Agricultural Land Requirements and Available Resources
Part IV	Land Available for Agriculture Through Reclamation
Part V	The Problem of Soil Erosion
Part VI	Maladjustments in Land Use
Part VII	Certain Aspects of Land Problems and Government Land Policies
Part VIII	Forest Land Resources, Requirements, Problems, and Policy
Part IX	Planning for Wildlife in the United States
Part X	Indian Land Tenure, Economic Status, and Population Trends
Part XI	Recreational Use of Land in the United States

Due to the shortage of printing funds it has been impossible to order as many copies as desired for distribution within the Forest Service. However, sufficient copies have been ordered of all sections except II and IV (which will be of relatively little interest to Forest officers), for distribution to Regional Foresters, Experiment Stations, and Forest Supervisors. Sections II and IV will be furnished to Regions and Experiment Stations but not to Forests.

In addition, a few extra copies of the sections on Problems and Policies (VII), Wildlife (IX), and Forestry (VIII), have been ordered for distribution among the most active cooperators of the Forest Service. Copies of the Forestry section are being requested for distribution to the Forest Schools. Due to the limited number of copies of this report which the Forest Service is obtaining, Forest officers desiring copies of any section for personal use should order them from the Government Printing Office, and should advise others who wish to obtain copies to do likewise. The purchase price of the several sections is not yet known, except for the Wildlife report, which is the smallest of the 11 sections. Its price is ten cents.

Material prepared by the Forest Service will be found in several of the sections of the report, which should be a useful reference work for some time to come. While it is regretted that a wider distribution cannot be made, the copies that will be furnished to Regional, Experiment Station and Forest libraries should make the report accessible to Forest officers having need for it in official work.

The several sections are in various stages from manuscript to final publication. Each section will be distributed as received from the printer. It will probably be several months before all sections are printed.

YE EDITOR DISCOVERS

The following increases in Forest Service appropriations for the fiscal year 1937 have been approved by the House Committee on Appropriations:

General Administrative Expense	$ 166,363
Protection and Administration	1,915,984
Research - Forest Management	116,500
Range Investigations	27,500
Forest Economics	8,000
Cooperative Distribution of Planting Stock	14,200
Uinta-Wasatch Land Acquisition Fund	50,000
	$ 2,298,547

Decreases from the amounts appropriated for the fiscal year 1936 were made in the following items:

Forest Surveys	$ 100,000
Forest Products	9,339

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Alva A. Simpson, Associate Director of the Plains Shelterbelt Project, who is in Washington at present, reports that plantings in the Shelterbelt are proceeding in Oklahoma and Texas at the rate of 10 miles of strips, or 200 acres, per day. At the present time about 2,000 men are being employed from the Relief Roll to carry on the work.

Average survival of last year's plantings, Mr. Simpson says, ranges from 87 percent in South Dakota to 62 percent in Kansas.

Due to the Supreme Court's decision regarding the AAA, the Project was not able to use the contracted acreage and plantings are now being made on land donated by land owners. There has been, however, practically no difficulty in securing donations of land for planting purposes.

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More than 4,000 transients are being provided with work on the National Forests under the present transient camp program, there being 38 such camps located in 13 States. The most important projects have been the construction of truck trails and minor roads and the reduction of fire hazards along roadsides. Fence building and tree plant disease control complete the list of major projects which total 80 percent of the work done by the transient camps. Nearly 90,000 man-days of work were accomplished in December and January by these workers, and of this amount over 80 percent was put in on five major projects.

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The following item by Frederic W. Wile in a recent issue of the Washington Star will be of interest to Ward Shepard's many friends in the Service:

"For the past three years the New Deal has been borrowing liberally from the colleges and universities, in order to fill key positions in Washington. Harvard has just reversed the process by asking John Collier, Commissioner of Indian affairs to 'lend' Ward Shepard to the President's alma mater, to become Director of the Harvard Forest School. He has just received the required leave of absence from the Interior Department. Mr. Shepard, an outstanding student of forestry practices, policies and legislation at home and abroad, is himself a Harvard forestry graduate. He has been serving here as special adviser to the Indian commissioner of social economic policies."

Mr. Shepard is a former member of the Forest Service, having worked for a number of years in Region 3 and in the Washington Office of Public Relations.

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Wilbur E. Cohen, Senior Chemist for the Division of Forest products of the Commonwealth of Australia, is now at the U. S. Forest Products Laboratory, Madison, Wisconsin, where he will spend the next 18 months studying the problems of wood chemistry and pulp-paper production.

Mr. Cohen first visited the Lake States Forest Experiment Station of the Forest Service, where he made inquiries into the research work in wood chemistry being done there. He visited lumber mills, paper mills and logging camps in the vicinity of Portland and Seattle before going to Madison. His plans include visits to the pulp paper mill and other wood products factories at Cloquet, Minnesota, and he will also visit pine-pulp paper mills in Georgia, where new principles of wood utilization have been developed.

Mr. Cohen will visit England and possibly Germany and Sweden before his return to Australia.

LYLE F. WATTS NAMED HEAD OF REGION NINE

The appointment of Lyle F. Watts as Regional Forester for Region Nine was recently announced by Mr. Silcox.

Regional Forester Watts is a graduate of the School of Forestry at Iowa State College, having received there the degree of B. S. in Forestry and Master of Forestry. Since his graduation he has been constantly engaged in forestry work, including 17 years in the Forest Service, during which time he has had wide experience in scientific and administrative work. Before his permanent appointment to the Forest Service in 1913 he saw wide service in the western forests in scientific research, and was in charge of the laboratory in forest planting for the Iowa State College. He entered the Forest Service July 1, 1913, as a technical assistant on the Wyoming National Forest.

In 1915 and 1916, Mr. Watts directed timber survey work on the Wyoming and Wasatch National Forests. In 1917, he was assigned to the Cache National Forest, as Forest Examiner in charge of forest planting at the Pocatello Nursery. From May, 1918 to April, 1920, he was Deputy Supervisor and later Forest Supervisor on the Boise National Forest, Idaho. From 1920 to 1926, he served as Supervisor of the Weiser and Idaho National Forests; on March 1, 1926, he was transferred to the Regional Office at Ogden, Utah, as assistant in forest management.

Mr. Watts left the Service in 1928 to accept a position as Dean of the School of Forestry of the Utah Agricultural College, a department which he organized. In 1929, he reentered the Forest Service to serve at the Intermountain Forest Experiment Station. On August 1, 1931, he was named Director of the Northern Rocky Mountain Forest Experiment Station, which position he is leaving to take up his duties as Regional Forester.

OFF WITH THE OLD

There are speedier and more comfortable means of transportation than that provided by the almost extinct saddle pony.

So decided Stanley R. Zeger, Chief of the San Juan 1935 range survey crew; and when the field work was completed, he said goodbye to the lowly beasts, came to Durango, shelled out his hard-earned cash at the local airport, and enrolled for a flying course. Morning after morning the tired citizens of Durango were rudely awakened by a deafening roar overhead, and many faces peered upward to watch the gallant old Eaglerock flutter fitfully about the sky, with Zeger jamming away at the controls. Eventually, however, he got the "hang" of it, and sailed serenely through the sky, right side up the greater part of the time. Landing, tho, was a different matter. Many times Zeger, intent upon making a perfect three-point, misjudged his distance or was caught by a tricky air current and either overshot the field or bounced along like a frightened flea until he could "gun" the thing and zoom back up into the comforting sky.

One cold gray morning the pilot gave his ship a fond farewell caress, assisted Zeger into the cockpit, and sent him off alone. Flying was easy, but getting back to earth, knowing there were no capable hands ahead to take over the controls if something went wrong, was another proposition. Just when his friends were preparing to get a broom and dustpan to gather up the pieces, he summoned forth the last remaining bit of nerve and set the ship down -- not gracefully, but down nevertheless.

If he returns to the San Juan to complete the 1934-35 survey, he no doubt will again be exercising his newly acquired wings. The Durango airport has been a dull place since he left. - From R-2 Bulletin

FOREST AREAS PRODUCE VALUABLE FUR CROP

"The forest areas of New York State produce a considerable percentage of the annual fur crop which, in spite of its steady decline, still exceeds 300 thousand dollars. This figure is a summary of conservative estimates as to the monetary value of the ten leading fur producing species of the State: muskrats, raccoons, skunks, red fox, mink, fisher, otter, marten, black bear and bobcat. It will be noticed that most of these animals are forest dwellers and even the muskrat and skunk are largely confined to waste or marginal land much of which is now under forest management," according to Professor LeRoy C. Stegeman of the New York State College of Forestry at Syracuse University.

"The leading species on this list are widely distributed throughout the State and according to different estimates about 75 or 80 percent of this fur crop is taken by the farmer or his boy, so that the cash income from the crop is widely distributed and paid to persons needing the additional income."

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT x x THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY x x TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

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Vol. XX No. 7 Washington, D. C. March 30, 1936

WE NEED INTERPRETERS, JAKE

By E. F. Rapraeger, Northern Rocky Mountain For. and Range Expt. Sta.

"What forestry needs in this country, Jake, is more interpreters. We got plenty of investigators who find out new things and plenty of practical men like you and me who can do things. But what we need most is interpreters, expounders, explainers, or whatever you want to call them, - a chain to connect these two sprockets so that the wheels don't run in opposite directions."

The instructive cruiser spat out his quid and swiped at a fly which buzzed too closely. "To go on with my story, Jake: Awhile back I was cruising near a camp which had been logging government timber for about ten years, off and on. The superintendent was pretty mad and says, They make me leave those young trees for seed which they call Dunning tree class 1 and 2, and make me cut a lot of limby trees which aren't worth nearly so much in our pond but which are just as good for seed.' Now here was a case, Jake, where the government had a practical man on the job who marked timber the way some smart investigator had figured out was the best way to mark it. But it didn't seem to be anybody's job to explain to the logger why the did it that way. So I felt that since ten years had gone by without anybody explaining the whys and wherefores, it was up to me to be an interpreter - this chain between two sprockets like I was telling you about.

"So we stood by a forty which this government fellow had marked and, through and beyond, we saw trees putting on wood in thick layers because they were husky and healthy like youths of sixteen. Seedlings took root in vital soil and canopied moist earth with green spires. In a bush, a thrush nested, and in the night of a rounded moon blacktail fed on succulent browse. A storm swept and pliant trees danced in its wrath; 'bugs' came to attack and were fought with mighty vigor. Men in denim cut posts and stulls from denser clumps, and near a stream which rushed in elation these same men built camp cottages with lace in their windows, and there was a playful puppy which children chased in glee. Machinery was moved in, and they took a lighter cut than usual because of their plan to work more area each year and treat each area more intensively by shortening the cycle.

"Those are the mystic things we saw as we stood there, Jake. I didn't understand them all but I interpreted them as best I could to this superintendent and instructed him furthermore on why those things couldn't happen if the trees that were left were limby and conky. The point I'm making, Jake, is that what this country needs is interpreters. Some fellow, for instance, collects a lot of statistics which a practical man like me or you can use but they ain't much good unless they're interpreted. Or else some fellow makes a deep study of some problem and gets a liberal education doing it, but his education and hard work don't do much good unless he slips the chain over those two sprockets I was telling you about."

CODDLING OUR CAMPERS

By John D. Guthrie, Washington.

> "When we go camping we have parking stalls for our cars, running water in the camp at the faucets, sanitary toilets, nice stoves to cook on, tables to eat on, and benches to sit on. The only thing we don't have to spoil a perfectly good camping trip is a beauty-rest mattress and an electric refrigerator.
>
> "Which all goes to mean - don't carry it too far. If you can't sleep on the rocks, bail your water out of the crick, pick flies out of the syrup, ants out of the sugar, and cuss the smoke that gets in your eyes while you're trying to fry the steak, what the hell's the use of goin' campin'? Might as well stay home."

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The above is the reaction of a California camper. Perhaps what he wants is a "wilderness area", but there is merit in what he says.

Recent information indicates that certain National Forest Regions are going rather to an extreme in providing "coddling" facilities on National Forest public campgrounds. In fact, it would seem that from one extreme of simple conveniences as latrines, drinking water, crude tables and bulletin boards, some Regions are swinging to the other extreme of providing what might be called city playground facilities on National Forest campgrounds. For example: It is my understanding that some Regions are now embarked on supplying about the following: fireplaces or stoves, tables, benches, drinking water, many latrines, shelters, wading pools, formal entrances, large parking areas, children's swings, teeter-totters, sandboxes, swimming pools, soft-ball courts, and in some cases 9-hole golf courses.

Some of the above facilities are perfectly proper and legitimate in municipal or city or state campgrounds and playgrounds, but wholly out of place and unjustified in National Forests; these refinements are distinctly a jarring note in a rustic or forest or mountain setting. The National Forests should offer forms and conveniences for outdoor recreation consonant with a forest background, and not attempt to duplicate nor compete with those forms available in cities. Moreover, it is of questionable public policy for the Federal Government to expend federal funds on such playground refinements in more or less direct competition with those being offered by towns and cities. A Cabinet Officer recently remarked that he didn't want the National Parks made into "Coney Islands"; do we want to "Coney Island" the National Forests?

It is my idea that the National Forests should offer only those recreational facilities not possible in cities and that such facilities should be distinctly those of an outdoor or woods variety.

Such outdoor or woods facilities would seem to include:

1. Fireplaces or outdoor stoves. (Native, rough stone or concrete)
2. Tables -- rustic or creosoted boards with attached benches or seats; or of native stone or concrete.
3. View or landscape and campfire seats -- of half logs or rough stone.
4. Plentiful supply of drinking water.
5. Latrines, preferably of the comfort station type (separate for men and women), rather than the isolated small house type, screened from public view essential.
6. Shelters, stone or rustic, may have fireplaces at one end -- (flagstone or concrete floors) and toilets at other end.
7. Lodges, to include comfort stations at one end with open shelter with fireplace at other end; preferably of local stone, of good design.

The preceding items are the essentials. To these should be added:

1. Formal entrances — local stone or concrete, pylon type. (no overhead arch) with name of site.
2. View or vista stations or sites with rough stone or half-log seats.
3. Archery butts to encourage archery as distinctly a forest recreation.
4. Footpaths (circle) out from sites to vista or view points.
5. Bridle paths (circle) for horseback riders.
6. Swimming pools - in natural waters where available; otherwise concrete but with artificiality carefully camouflaged. If pools large or deep enough, provide spring boards.
7. Wading pools (see preceding item).
8. Ample parking space, screened by vegetation from main camp.
9. Forest and plant arboretums of local species; transplanting wildlings to campsites where needed.
10. Small natural-history museums and registry stations of local stone or wood.
11. Creek, river or lake beaches — sand — develop or create where these do not exist naturally.
12. Boats and boat landings where local waters offer possibilities.
13. Minimum of artificial signs and signboards, mostly if not entirely of carved, stained or burned wood (no painted nor enamel signs).
14. Wherever landscaping is done imperative to preserve absolutely natural conditions; any suggestion of the artificial is totally out of place.

HARVESTING THE HURON TIMBER CROP

By Seth Jackson, Huron

Mr. Carter's article of February 3 concerning German methods of harvesting the timber crop strikes a responsive chord on the Huron.

Since the inception of ECW, 10,000 acres of Norway pine plantations have been liberated from an overstory of oak with scattered patches of jack pine. A definite attempt has been made to place salvage operations on a businesslike and profitable basis.

After months of development in methods, we now brush out service roads at half mile intervals through our plantations, which are on leval sand plains. As liberation work progresses, each camp's two single horse drays haul all material over two inches in diameter to the nearest service road where salvage products are ricked to await a purchaser. The smaller, crooked, or unsound coniferous sticks and all oak are loaded on trucks and taken to camp for fuel. All merchantable jack pine is cut into 4 and 8 foot lengths to be in readiness to peel by a pulpwood contractor in the spring before Ips damage begins. This material is hauled by truck to the nearest paper mill, some 200 miles distant. We find an occasional sale for sawlogs or house timbers. and our most recent sale is to an operator who has developed a new use for jack pine - mine prop wedges. The old order changes, since not so many years ago jack pine was considered almost worthless!

We sell approximately 500 cords per camp year, delivered for peeling on service roads. Past experience has shown us that excessive damage results when operators are allowed to do their own logging on plantations. Thus our harvesting policy closely proximates European practice as described by Mr. Carter.

BE WARY OF SAMPLE PLOTS

By Hermann Krauch, Southwestern For. and Range Expt. Sta.

Within a 160-acre permanent sample plot of cut-over ponderosa pine, established in 1913 on the Coconino National Forest, seven "intensive" plots ranging from 2 to 4.8 acres each were laid out at the same time. The following table shows the mean annual increment and mortality as based on a 20-year record of these plots.

Plot designation	Area of plot	Average d.b.h. of trees	Number* of trees per acre	Volume* per acre	Mean ann. increment per acre			Mean ann. increment percent		
					Gross	Mort.	Net	Gross	Mort.	Net
	A.	In.	No.	Ft. b.m.	Ft.b.m.	Ft.b.m.	Ft.b.m.	%	%	%
Individual Intensive Plots										
A-1	4.8	19.3	11.4	3193	130	33	97	4.07	1.03	3.04
B-1	4.8	18.2	9.2	2051	76	5	71	3.70	0.24	3.46
C-1	3.0	17.5	12.0	2342	84	37	47	3.59	1.58	2.01
D-1	2.0	17.2	17.0	3188	109	2	107	3.42	0.06	3.36
E-1	2.0	21.4	12.5	4660	78	28	50	1.67	0.60	1.07
F-1	2.0	21.0	16.0	6598	127	0	127	1.92	0.00	1.92
G-1	2.0	17.0	18.0	2820	131	1	130	4.65	0.04	4.61
Combined Intensive Plots Compared with Extensive Plot										
Intensive	20.6	18.6	12.7	3239	103	17	86	3.18	0.52	2.66
Extensive	139.4	18.5	12.1	2486	97	18	79	3.41	0.63	2.78

*Includes only trees 11.6 inches d.b.h. and over. Measurements in 1913.

As will be observed, for no individual intensive plot are the results anywhere near in agreement with those of the large "extensive" plot. On the other hand, when the seven individual intensive plots are combined and treated as a single plot of 20.6 acres, the results come remarkably close to those for the extensive plot, especially as regards increment percent which, because of the differences in volume per acre, is the correct basis for making comparisons. The close relation between average diameter and number of trees on the respective areas is no doubt the principal reason that the results are so nearly in agreement.

These examples would seem to substantiate what the writer pointed out several years ago, namely, that increment data based on small sample plots are not directly applicable to extensive areas unless the degree of stocking and distribution of diameter classes are the same; and further that because this relationship seldom does obtain, the best method of determining increment for uneven-aged stands is to apply the growth of the average trees in each diameter class to a stand table.

CHINA HAS SHELTERBELT PLANTATIONS

The following excerpt from page 291 of Dr. F. H. King's "Farmers of Forty Centuries", should furnish food for thought to unfriendly critics of the President's Shelterbelt Project:

"ABOUT TIENTSIN

On the 6th of June we left central China for Tientsin and further north, sailing by coastwise steamer from Shanghai, again ploughing through the turbid waters which give literal exactness to the name Yellow Sea. Our steamer touched at Tsingtao, taking on board a body of German troups, and again at Chefoo, and it was only between these two points that the sea was not strongly turbid. Nor was this all. From early morning of the 10th until we anchored at Tientsin, 2:30 P.M., our course up the winding Pei-ho was against a strong dust-laden wind, which left those who had kept to the deck as grey as though they had ridden by automobile through the Colorado desert. So the soils of high interior Asia are still spreading eastward by flood and wind into the valleys and far over the coastal plains. Over large areas between Tientsin and Peking, and at other points northward toward Mukden, trees and shrubs have been systematically planted in rectangular hedgerow lines, to check the force of the winds and reduce the drifting of soils, planted fields occupying the spaces between."

ANOTHER ROOSEVELT WHO BELIEVED IN FOREST CONSERVATION

By W. R. Mattoon, Washington

Colonel Henry L. Roosevelt, Assistant Secretary of the Navy, who died recently, was another typical member of the Roosevelt family. He appreciated the importance and value of trees. This is illustrated by an experience I had back in about 1920 while he was quartermaster at the U.S Marine Barracks, Quantico, Virginia.

In the hurried days of preparation for war, much waste was common everywhere in the name of the necessity of national defense. This waste included a great deal of unnecessary destruction of trees and forests.

Colonel Roosevelt was a shining example of one believing in the preservation of trees along with emergency work. At Quantico, his work was a striking example of foresight and good judgment on the part of a man who regarded the trees in their real value.

In the extensive construction of roads and the laying out of some 25 new barracks beside club houses on the hills back of Quantico, which took place during the expansion period of and after the World War, Colonel Roosevelt preserved every tree so far as possible. When I went there for several days as a representative of the Forest Service I learned from almost the first man I met that Colonel Roosevelt took the stand that if any man cut down a tree needlessly, he would be "shot on the spot". Although not to be taken literally it indicates his conservation.

In clearing openings for vistas from the various quarters on the hillside, I was asked to designate the various species of trees in their relative values so that the man in charge might carefully select the least important and least valuable trees to be cut, thus saving the better species.

Fires had been common and severe on the large reservation tract lying back of the barracks and at Colonel Roosevelt's request I drew up a plan of fire prevention and suppression involving the assignment of personnel, the construction of telephone wire, and the cooperation of the people living on or near the reservation.

YE EDITOR DISCOVERS

The men who attended the Spokane fire control meeting are beginning to find their way back to Washington and report that a very productive session was held.

The first week of the meeting was devoted to equipment problems and the second week to general fire subjects. The minutes of the 1931 equipment meeting, which was also held at Spokane, were reviewed and every job then assigned was either checked as completed and adopted into regular practice or was listed among the tasks needing follow-up action.

Other accomplishments in the field of equipment not covered by the development program laid out at the 1931 Spokane meeting were listed, and the result was most impressive. With so many active minds engaged in a wide range of fire activities, important constructive development has gone on constantly. After the list of "other accomplishments" in fire equipment was displayed on the large blackboard, one Regional representative remarked, "Well, the old Forest Service isn't asleep after all."

Future needs for constructive work on fire equipment were then reviewed, and as each item came up for consideration a tentative allocation of the job was made either to a Region, Experiment Station, or the proposed Spokane Equipment Laboratory. When the list of future needs and possibilities was fully considered it was apparent to all that the logic of the whole program pointed to decentralization of constructive work on fire equipment rather than to centralization in the proposed laboratory. The meeting thereupon formulated recommendations that the central equipment laboratory need not be given any further consideration at the present time.

Stenographic notes were kept of the proceedings of the entire meeting, and, as soon as Regional Forester Kelley edits them, they will be issued in mimeographed form, together with unedited copies of all the papers prepared for presentation at the meeting.

The meeting deplored the fact that under present conditions there is no medium for interchange of information among the various units and agencies engaged in constructive work on fire control. To meet this situation, it was recommended that the Washington Division of Fire Control issue an intermittent mimeographed publication giving current information on new developments of every form in connection with fire control. These fire control notes should not only keep our own administrative organization in touch with developments everywhere but also should be of direct use to Experiment Stations, State organizations, and Forest Schools.

In accordance with a plan adopted by the meeting, Mr. Haynie has already inaugurated work on an equipment manual which is scheduled for use in printed form by July 1, 1937.

An impressive exhibit of new fire control equipment was assembled at Spokane and some time was devoted to making these developments familiar to the entire personnel of the meeting.

The view is often expressed that actual organization of manpower for speedy corralling of fires has lagged farther behind in the historical development of fire control than any other single item. If this is true, then the Spokane meeting must represent a turning point in the history of fire control. Mr. Shoemaker of Region 1 and Mr. McReynolds of the Rogue River National Forest presented concrete and impressive developments in this backward division of the activity. If the results in speed in corralling Class C fires which were reported by these men are to be taken at their face value the future will tell a very different story in terms of amount of edge worked per man hour.

The meeting expressed strong interest and support for the aerial fire control project, which was presented in a preliminary form by Mr. Godwin. Hard-bitten regional men voted that a substantial amount of funds available for actual fire control on the ground be diverted to development of this project, which includes such items as promotion of the development of aircraft more directly suited to our use, aggressive developent of chemical combinations more efficient than an equal weight of water, for possible use from aircraft as well as in our usual water using apparatus, experimentation to determine the possibilities of dropping water directly on smaller fires from aircraft, and experimentation to determine the possibility of dropping explosive bombs in order to retard the spread of smaller fires by throwing dirt on the burning material. Numerous organization units of the Service are to push specific portions of the project with the Washington Division of Fire Control responsible for general supervision.

The perennial subject of fire prevention came in for its due share of attention. The meeting favored some arrangement under which our whole range of ideas and practice would be given a systematic review by men trained in the modern arts of advertising and applied psychology. The hope is that critical review of our previous practice in this respect may load to fundamental adjustments which will enable us in due time to make some real headway with the scandalous facts of incendiarism and plain carelessness which are responsible for so large a proportion of our total number of fires, both in and outside the National Forests.

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Senate hearings on Department of Agriculture appropriations for the fiscal year 1937 were completed on March 17. During the hearings, Mr. Silcox and other members of the Service presented reasons justifying the restoration of the decreases made by the House Committee below the amounts approved by the Budget Bureau. The Committee provided opportunity for a full presentation of the arguments covering each item and apparently will give them sympathetic consideration, but what the final outcome will be is not at present known.

Representatives of various outside organizations were also heard in support of the requests for restoration of the full amounts covering several of the items, such as the Forest Survey, insect and disease control, and minor roads and trails. Others urged increases above the budget figures for such items as land acquisition under the Fulmer Act, the Madison Laboratory, and Section 2 of the Clarke-McNary law.

The status of the Shelterbelt Project is still undetermined. In connection with the hearings on this project, the Forest Service prepared several books of photographs for the use of the Committee members. The pictures depict the success of shelterbelt plantings in the Plains Region and show the development of plantations of different species. One photograph of a Nebraska shelterbelt was colored. An enlargement of this picture, also colored, was presented to President Roosevelt, who expressed his appreciation of the photograph and his interest in the project.

Several amendments to the Agricultural Appropriations Bill have been introduced on the floor of the Senate. One of these by Senator Norbeck of South Dakota would continue the Shelterbelt Project on a slightly different basis than before. The amendment provides for a fifty-fifty sharing of costs and the free distribution of planting stock to farmers in the Plains Region. Senator Pope of Idaho introduced an amendment increasing the item for the Forest Survey from $150,000 to $250,000, the amount carried in the budget. Senator Johnson of California introduced an amendment for an increase in the forest influences work of $500,000. Senator Hatch of New Mexico also has an amendment to this item proposing an increase of $500,000 for this work.

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B. F. Heintzleman, Principal Forester in the Division of Private Forestry, has been detailed to Region 6 for five or six months to work on the Olympic Peninsula private forestry situation. The timber industry in this section is faced with a critical situation, its production being so much in excess of the sustained-yield growth capacity that it is rapidly depleting the present timber. For instance, in the Grays Harbor section some 20 billion of the original 60 billion feet remain, but only two-thirds of this is readily accessible and somewhat over half is pulp species. A material increase in pulp and paper production and a material decrease in sawmill production in the near future are necessary if forest resources of the locality are to furnish the maximum support for the dependent communities and population. A timber industry of considerable size has developed in the south end of Puget Sound and must also receive attention. Mr. Heintzleman, working with all practicable agencies, will attempt to develop suitable cooperative plans of operation that will provide economic and social stability in the Olympic Peninsula territory.

STATISTICS

By Marshall G. Ramsey, Beaverhead

Did you ever stop to think just how far you would build a jack log fence, five poles high, from the amount of poles cut on your district each year?

I just thought, after checking some of the cuttings, of the distance they would span if these poles were placed end to end. I used an average annual cut of 50,000 poles, which is a very conservative estimate for the Wisdom District.

In the past 20 years, the poles cut, if placed end to end, would reach across the United States from east to west a distance of 2,780 miles, and also span the north-south distance of the United States, 1,600 miles.

With each five years' cut I could build a five-pole fence all the way around this district, which contains approximately 500,000 acres. I have one permittee who required 16 miles of fence to fence in all his haystacks after saving three years' hay crop.

I could build a corduroy road 62 miles long, or if I wanted to go after the stratosphere record and wanted a solid foundation to climb on, I could go 62 miles high. If I should place the poles end to end with a flag on the top pole, I could wigwag the natives in Mars with the greatest of ease. This is from only the Wisdom District. Other districts undoubtedly will come close to this number, and, mind you, we are still cutting poles. If times keep good, we will soon have cut enough poles to build a bridge to the Hawaiian Islands, where we could spend our winters under the palm trees. - From R-1 Bulletin

PLANTING STOCK MUST CONTEND WITH HIGH SURFACE TEMPERATURES

Experimental findings have pointed out that small trees, such as the seedling stock commonly planted in the field, may be killed by exposure to temperatures of approximately 125°F. That soil surface temperatures frequently exceed this amount is indicated by measurements carried out in connection with a comprehensive planting experiment on the Huron National Forest.

During the period August 17-28, 1933, the average maximum temperature at the surface in one planting block was 155.2° F. During this time all maxima were over 150° and the highest reading was 162° F.

Again, for a 17-day period in June 1934, the average maximum temperature of the surface soil at the same location was 143° F., with all readings over 130°. Even later in the season, from August 28 to September 7, 1934, the average maximum temperature at the soil surface was 110.2°, the lowest record being 83° and all others over 100°.

It is thus evident that small trees in plantations are frequently subjected to potential lethal temperatures, and even though these exposures are often of short duration, the repetition of such conditions weakens the trees and eventually causes the death of those least hardy. - Technical Note, Lake States For. Expt. Sta.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xx : TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

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U. S. F. S. REF. LIBRARY JUL

SEED EXTRACTION, STORAGE, AND TESTING IN CENTRAL EUROPE

By Hardy L. Shirley, Lake States For. Expt. Sta.

Since the most widely used trees in the forests of Central Europe are Scotch pine and Norway spruce, the kilns and other seed extraction equipment are designed especially for these species. In this locality, cones of both species remain closed during winter and may be collected any time after they are ripe up until the cones begin to open in early spring. The cones are usually picked from either standing or felled trees, labelled, and then shipped to the extractory. Winter-collected cones are usually relatively dry and when stored in unheated warehouses are not subject to molding or heating.

Seed Extraction

I, as a Fellow of the Oberlaender Trust, recently visited the large extractories at Borlange, Sweden, and at Wolfgang in Germany, and also saw a small kiln at Eberswalde, Germany, suitable for handling the cones which might be collected on a single ranger district. The two large kilns are quite similar in many respects, particularly in their use of mechanical methods of handling the cones and the work in the extractory. The cones are received from either a railway car or from wagons and dumped on a conveyor belt which conducts them to a screening device where needles, sticks, and other trash are removed. After cleaning, the cones are conveyed to the top of the storage sheds and dumped into bins.

In Sweden the bins contain only one compartment and have inverted V-shaped troughs passing through them for ventilation. If heating occurs, the cones may be removed through the bottom of the bin, placed on the conveyor belt and carried to the top again. The shed is, of course, well ventilated.

The storage bins in the German kiln consist of three tiers of compartments, in which the cones are spread out in layers about two to four feet thick. The cones are removed from the bins and transported by gravity or by small cars to the kiln which is also equipped with elevator belts.

These kilns have in common the features of forced ventilation, and operation at relatively low temperatures. In the Swedish kiln the cones are placed in small trays each holding about one-half bushel. The temperature at the top of the kiln is 77° F. Every half hour the trays are lowered one notch in the kiln by means of an elevator chain until they reach the bottom where the temperature is 122° F. This takes 10 hours. The cones are then taken to a revolving drum which shakes the seeds free from the cones. Unopened and partially opened cones are discarded. No attempt is made to extract every last seed, since those from the base of the cones are considered of little value.

The seed is next conveyed to the winging device, which consist of two cylinders one revolving within the other. Both cylinders are studded with 1-inch wooden pegs which thoroughly knead the seed mass breaking off all wings.

The small German kiln is similar in most particulars to the Swedish kiln except that the air is forced through the seeds more rapidly and a lower temperature is used. The large German kiln is slightly different, being divided into compartments each holding 7 hectoliters (approximately 20 bushels) of cones. The cones enter at the top of the kiln where the temperature is about 68° F. From this warming section they enter the first compartment of the kiln proper (temperature 95° F.). As soon as one lot moves to a new compartment, another one enters the kiln. From the first section the cones pass to the second where the temperature is 113° F. and thence to the final section where they are heated to 131° F. In this compartment the cones are tumbled in a revolving drum during the final drying process. Since the seeds fall through the drum and outside the kiln into bags, there is little danger of their becoming overheated. The entire time required is 8 to 12 hours, depending upon the type of cones and their condition.

The winging machine used at the German extractories rubs the seeds against stiff brushes. This appears to be equally as effective as the Swedish method.

The fanning mills for finally cleaning the seeds are very efficient. The German extractories use one developed at Eberswalde. This has screens with slotted openings so that needle fragments can readily be screened out. The draft is regulated so that all empty seeds are removed. Two or more runs through the fanning mill are not infrequently required to get the seed of the desired purity. As a result, the degree of purity obtained, often better than 99 percent, is astonishing to most American foresters. Rarely does a sample fall below 95 percent clean, sound seed.

At Brno, Czechoslovakia, a special machine has been developed for extracting seeds from the cones of European Larch which cannot be opened satisfactorily by usual kiln methods. This consists of a shredding device which tears the scales from the cones and thus releases the seeds.

Seed Storage

At the Swedish extractory cubical, galvanized metal cans of about ten gallons capacity are used for storing the seeds. These are sealed with a metal cap after filling. The German extractories use sealed glass carboys. The containers are stored in underground, ventilated cellars in which the temperature ranges from 45° to 52° F. throughout the year. Special precautions are taken to keep the cellars dry. Pine seed in the cellars will retain its viability for 5 years or more. In special tests samples 10 years old have given 50 percent germination.

Seed Testing

Several devices have been developed for sampling seeds. These are arranged and used in such a manner that a vertical column of seeds may be drawn from the container. If the latter is a bag, equal quantities of seed must be drawn from the top, center, and bottom and mixed together for a sample. The International Seed Testing Association has laid down rules for sampling seeds which are adhered to by most dealers in forest seeds.

Germination tests of forest tree seeds are usually conducted at regular seed testing stations, but in Germany and Czechoslovakia special laboratories are devoted entirely to work with forest seed. Some extractories do their own testing. Although the actual technique used varies considerably at the different laboratories, the tests made may be divided into the following groups:

1. Germination tests on moist blotters or filter paper.
2. Germination tests in sand or ground brick.
3. Tests of viability not involving germination.

Numerous different devices are used in the filter paper tests. The most common and one of the best is the Jacobsen germinator, and modifications of this. This germinator consists of a water bath, heated to 86° F. during the day and 68° F. at night, and supplied with cloth or filter paper wicks. The latter convey the water to a piece of filter paper on which the seeds are placed and covered with an inverted funnel or small bell jar.

Other methods involving the use of filter paper as media for moistening the seeds include: wrapping the seeds in filter paper and then placing them in an ordinary drinking glass which is placed in a germination cabinet; wrapping the seeds in filter paper which is enclosed between moist blotting paper in the germination cabinet; placing the filter paper and seeds in a porous clay dish which rests on moist sand in the germination cabinet; and placing the filter paper and seeds on a pressed wood pulp pad, such as that used to catch the foam from beer glasses, which rests on moist blotters or in the water.

Tests using sand are of two types. Fine sand on a dinner plate is used as a moisture medium and the seed placed just beneath it. The sand is usually covered with a circular piece of glass and a second plate inverted over the first. To test the sprouting force, the seed is covered with about an inch of coarse sand, and only those seedlings which can push through are counted. Ground brick forms an even better medium for testing sprouting force.

For seeds slow to germinate certain special tests are used. The kernels of fruit tree seeds and also of many forest seeds can be examined under an ultra-violet lamp. Good seeds appear white, while rancid seeds are yellow. Catalase activity may also be used as a measure of seed vitality. Since this varies not only with the percentage of sound seeds but also with their degree of dormancy, considerable care must be used in predicting germination percent by this method.

SOUTHERN PINE MILLS ENTER PREFABRICATED HOUSE FIELD

By Albert R. Israel, Southern Pine Association.

Houses! Houses!! Houses!!!

Low-cost, comfortable, livable, lumber-built houses turned out by the wholesale, large sections at one time -- one-third of an end-wall of an ordinary-sized house with a door or a window in it, half of the floor of an ordinary-sized room, one-eighth of a roof, sidewall panels measuring from five to seven feet wide and more than seven feet high with and without windows in them--and each section a complete, fabricated unit, ready to be bolted and securely joined to another section in its proper place with other component parts, making a comfortable, finished structure in which to live!

And, these fabricated-unit houses -- they're also demountable -- have been produced in quantities daily at Southern pine sawmills where the trees brought in from the forest are cut into lumber of different widths, thicknesses, and lengths to be used for various purposes in building after the lumber has been properly finished and seasoned.

This mass production of houses is an innovation in the customary manufacturing activities of Southern pine sawmills, which heretofore have been devoted almost entirely to producing various items of lumber to be used at the building site in the traditional manner of house construction. In the past many sawmills have furnished "knocked-down" boxes and crates for automobiles, pianos and machinery, but turning out "knocked-down" houses, all ready to be put together speedily, and occupied within a relatively few days, is something new. ***

During the past year some 7,000 prefabricated lumber houses for the CCC camps have been produced by Southern pine sawmills. All the lumber used in them must be officially SPA grade-marked, or accompanied by a certificate of inspection as to proper grades from the Southern Pine Association. There are from 14 to 16 buildings in each CCC camp and the sawmills turn out the camps complete as a unit, even shipping the nails, screws, bolts, nuts and various items of hardware, and other materials needed for putting the sections together, in the cars along with the fabricated lumber panels. All outside surfaces are painted at the mills before shipping.

The buildings for a camp include four barracks, mess hall and kitchen, forestry agents' headquarters, officers' quarters, headquarters building, storehouse, welfare building, schoolhouse, dispensary, lavatory and bathhouse, latrine, and occasionally one or two additional service buildings. These various structures range in size from 20 x 30 ft. 7¼ inches for the headquarters building, to 20 x 160 ft. 7¼ inches for the mess hall and kitchen. Each of the four barracks is 20 x 130 ft. 7¼ inches. Fabricated sections range in size from 5 x 7 ft. 3¼ inches for wall panels, to 5 x 12 ft. for roof panels. ***

A feature of the fabricated-unit lumber construction of the CCC houses is the use of a practical, new device, known as the "modern timber connector", in the roof system, whereby a building composed of prepared units is made into a strong and rigid structure, but one which can be easily disassembled. The timber connectors are placed in the roof members at the sawmills. A striking test of the strength of these prefabricated-unit houses was afforded recently when a hurricane swept over certain sections of Florida where CCC camps are located. The camp buildings successfully withstood the violent winds and came through the storm with virtually no damage. ***

These fabricated-unit, sectionally constructed houses are easily demountable and can be easily and speedily erected again. It is believed they would be particularly satisfactory and practicable for dwellings in numerous rural communities and possibly suburban areas, and in many sections of the country it is thought they would bring about a remarkable transformation both in the visual beauty and comfort of rural life. They would be suitable for summer cottages, garages, mountain and seashore resort cabins, tourist camp cottages, roadside structures, construction camps, farm tenant houses, and for various other purposes. This type of house would be distinctly serviceable to meet emergency needs for immediate housing facilities in storm, flood or fire stricken areas, where large numbers of residents are suddenly made homeless.

REGION 8 INAUGURATES NEW SERIES OF RADIO PROGRAMS

A series of radio programs, under the general title "Uncle Sam's Southern Foresters" was inaugurated over Station WGST on Friday, February 28, at 3:20 p.m., when the subject "What Does a Dixie Ranger Do" was discussed by S. R. Broadbent of the R-8 Regional Office and J. W. Cooper, in charge of the Hiawassee District of the Cherokee National Forest.

Popular march music, played by the 22nd Infantry Band from Fort McPherson, under the leadership of Acting Director Harve Sansing, preceded and followed the dialogue by the foresters.

Mr. Broadbent, a graduate of the University of Missouri and the Yale Forest School, has had wide experience both on the ranger and administrative staffs of the Forest Service in the West and in the South. Mr. Cooper, a native of Athens and a graduate of the Georgia Forestry School, is a genuine Dixie Ranger, his activities having been confined to the Cherokee National Forest in Georgia and Tennessee.

Leaders in conservation activities in the South and officials of the Forest Service will participate each week in the Southern Foresters' series. - From R-8 News Release

EXPERIMENTAL PLOTS SHOW TIMBER GROWTH FACTS

Vital facts bearing on the permanency of the Douglas fir timber industry in Oregon and Washington are shown by records of tree growth on some of the 59 sample plots maintained by the Pacific Northwest Forest Experiment Station.

In the Willamette National Forest north of Oakridge, Oregon, sample plot observations have been recorded over a 25 year period on second growth stands now 79 years old. In the 25 year period records show that the board foot volume of timber doubled, average height of trees increased by 40 feet and average diameter of trees by 5 inches. The greatest per acre annual volume increase for any five year period was 1,925 board feet, Scribner rule, and the average annual increase over the full 79 years has been from 807 to 882 board feet per acre per year. Total present timber volume is shown to be 67,000 board feet per acre in spite of a twenty-five year loss from beetles, windfall, and other causes amounting to 10 percent of the present volume.

Other reports on Douglas fir permanent sample plots show less favorable growth figures. At the Wind River experimental forest near Carson, Washington, observations since 1914 cover a Douglas fir stand now 93 years old. The total volume per acre for the older growth is now 61,000 board feet by Scribner rule. The mean annual increment for 93 years is shown to be 660 board feet per acre, the stand losing more by mortality in the last five years than it grew.

A five year study of sample plots of 45 year old timber near Zigzag ranger station on the Mt. Hood National Forest shows a periodic annual increment of from 1170 to 1420 board feet per acre in spite of insect and windfall loss. This rapid present growth, however is not indicative of the mean annual increment for the life of the stand which to date has been from 337 to 385 board feet per acre. - From R-6 News Release

ENGINEERING HANDBOOKS

By G. H. Lautz, Washington

During the past year Engineering has prepared the following 11 Service Handbooks on Engineering activities.

1. Forest Truck Trail Handbook
2. Structures Section of the Truck Trail Handbook
3. Design and Construction of Forest Service Dams
4. Small Water Developments Handbook
5. Aerial Survey Handbook
6. Forest Trail Handbook
7. Abney Level Handbook
8. Engineering Field Tables
9. Specifications for Road Equipment and Supplies
10. Signs and Symbols for Draftsmen
11. Fish Stream Improvement Handbook

The last two are now in the hands of the printer. Another on Erosion Control Structures is in preparation. Copies of all of these handbooks have or will be sent to the Regional Foresters and Experiment Station Directors.

With minor exceptions, the handbooks are available to and have been distributed to other Federal and State agencies. Most of these agencies are either using the Forest Service handbooks as instructions for their work or in the preparation of their own handbooks or manuals. In other words, the Forest Service is now in a position of leadership, and other agencies are taking advantage of our experience and work.

Handbooks Nos. 6, 7 and 8 can be secured from the Superintendent of Documents for 15¢, 5¢ and 75¢, respectively, and No. 10 will be available when printed. The others are sold through the Washington Office; No. 1, 1934 edition, Nos. 3 and 4 at 80¢ a copy; No. 1, 1935 edition, and No. 11 at 60¢ a copy; Nos. 2, 5 and 9 are for official use only and not for sale. A large number of copies have been secured by the public and by other Government bureaus.

These handbooks have assisted greatly in obtaining the objective in securing complete coordination through the Forest Service and giving assistance to the field.

GRADUATING CEREMONY MARKS NEW CCC ADVANCE

CCC history was written last week when 108 tree troopers of the U. S. Army Camp, Canby, filed to the stage in the Long Beach, Washington, gymnasium to receive diplomas and certificates for faithful completion of night school courses under the corps' educational program. Camp Canby is located near the site of the historic fort at the north entrance of the Columbia river.

Enrollees of the company are mainly from Grays Harbor, Pacific and Wahkiakum Counties. The average age of those receiving certificates was 19.

"There is no doubt", according to J. O. Shank, educational adviser for the camp, "that the mixture of schooling with the practical and technical work carried on by the camps is an advantage to the boys. The work opens their eyes to the importance of education, pointing out avenues of attainment which would not otherwise have been seen in the same way. Roughly 90 percent of our boys have engaged in these voluntary night school courses. The honor roll to which we are awarding certificates includes mainly boys who have completed courses in auto mechanics, diesel engineering, elementary forestry, photography, electricity, journalism, and Red Cross work. Eleven eighth grade diplomas were awarded."

Extension courses used by the Canby CCC company and by the Fort Lewis district are furnished by the University of California. State and local public school systems and the Forest Service also cooperate with the CCC education program. - From R-6 News Release

YE EDITOR DISCOVERS

The Department of Agriculture appropriations bill for the fiscal year 1937, carrying several amendments by the Senate, has now been referred to the conferees of both Houses for consideration, and final action is expected within the next few days. The amendments made by the Senate include ten million dollars for acquisition of National Forest lands, one million dollars to continue the Shelterbelt Project, an increase of $491,639 for forest products investigations, an increase of two million dollars over the amount recommended by the Budget Bureau for roads and trails, and numerous smaller increases, bringing the total in excess of the amount authorized by the House to 13 million dollars.

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Mr. Silcox was chosen as arbitrator in the strike of building service employees in New York City. Out of a total of some 200 persons suggested to act as arbitrator, it is reported that Mr. Silcox was the only one on whom both sides could agree. He has recently made two short trips to New York City and is now in the process of analyzing briefs. Rebuttals by each side to the controversy were submitted at a session on April 3.

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The Forest Service has been called upon by the Department to supply for a forthcoming publication a report on technological developments by the Service. There are many of these to report upon. In fire control, for example, we started in 1905 without knowing either the nature or the magnitude of the job and with no precedent or body of thought to guide in the development of what has since that time become a far-flung and intricate system. Whether this system is entitled to classification as "technology" may be open to debate, but the often bewildered and sometimes bored expressions on the faces of men attending the Spokane fire meeting would suggest that the subject has become very technical in places, at least.

The development of the tractor trail-builder tool could be made the subject of an interesting success story having to do with the invention and sustained development of an important tool for obtaining conservation results.

Out of the years of good thinking about successes and failures in planting has grown a body of technical knowledge and practice which is strictly an American product and entitled to respect as an item in American technology.

Our 12 x 12 lookout house started its career on the ground but under the latest developments in technology has gone to elevations of 100 feet, supported by steel towers which our engineering technologists certify will stand up against any reasonable hurricane; all of which is a contribution to conservation practice based on technological developments in the arts of steel making and designing of structures together with good executive thinking.

There are many other interesting chapters which could be written on the subject of technological developments by the Forest Service, if anyone had the time to search out the interesting aspects and report them in readable words.

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A recent issue of the "Southern Forestry Notes", published by the Southern Forest Experiment Station, was printed on paper made from southern pine pulp at the Forest Products Laboratory.

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Mr. Silcox, on March 25, assigned responsibility for all phases of the Shelterbelt Project, excepting research, to the Assistant Chief in charge of the Divisions of State and Private Forestry.

The Chief of the Branch of National Forest Administration through his Division of Forest Management will arrange with Mr. Tinker to provide advice and inspection service in connection with nursery and planting activities on the Shelterbelt; such advice and inspection will cover both organization and field practices directly related to nursery and planting work and the application of recommendations made by Research.

Shelterbelt research activities, including the development of nursery and planting technique, will continue as heretofore under the supervision of the Chief of the Branch of Research.

SOIL TREATMENT GREATLY INCREASES JACK PINE REPRODUCTION

Although considerable literature has been published on how to secure jack pine reproduction, relatively few cases are known where investigators have actually obtained reproduction in any quantity by use of the recommended methods. The experiment described below explains a method by which a significant number of jack pine seedlings were obtained as a result of the treatment of the stand and soil.

The experiment was carried out in a stand of 70-year-old jack pine growing on shallow loam soil in the rock out-crop region of northeastern Minnesota. Other species represented in the stand were black spruce, paper birch, and aspen.

In October 1934, the following soil treatments were used: (1) all duff removed with mattocks and rakes, and (2) duff torn up or "disturbed" with mattocks. On another area the duff was left undistrubed. During February 1935 the area was cut clean and the slash carefully lopped and scattered. By early summer it had dried out sufficiently to permit some of the seed to fall from the jack pine cones. Due to unusually favorable moisture conditions, germination commenced about the first of July. Reproduction counts made in early August showed the results given in the following table:

Number of Seedlings Per Acre

Soil Treatment	Species		
	Jack Pine	Black Spruce	Paper Birch
Duff not disturbed	0	0	333
Duff disturbed	1,365	45	728
Duff removed	14,250	1,425	4,950

Removal of the duff, which in this case was tough and about 2 inches thick, greatly stimulated reproduction. Proper mechanical equipment has yet to be developed to make these results of practical use on rough rocky sites. On sandy areas, however, many implements such as disk and spring-tooth harrows or plows of various kinds could be used to advantage in exposing the mineral soil. — Technical note, Lake States For. Expt. Sta.

GARVER TO HEAD FOREST SURVEY

Raymond D. Garver, formerly in charge of selective logging investigations and related utilization projects at the Forest Products Laboratory, Madison, Wisconsin, has been appointed by Mr. Silcox to head the nation-wide forest survey being conducted by the Service. Mr. Garver succeeds C. M. Granger who recently became Assistant Chief of the Forest Service, in charge of the National Forest Divisions.

Mr. Garver is a graduate of the forest school at the University of Nebraska, and obtained a master's degree in forestry at Iowa State College. He has been with the Forest Service since 1910, and has had a wide and varied experience in research, administrative and technical positions. Up to 1925 he was employed in the Rocky Mountain region as Director of the Wagon Wheel Gap Experiment Station, forest supervisor and regional inspector and had special assignments in land classification, timber and grazing management. Since then he has been a member of the staff of the Forest Products Laboratory, and is the author of several technical bulletins and numerous articles presenting the results of his investigations.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER.
>
> Theodore Roosevelt

Vol. XX No. 9 Washington, D. C. April 27, 1936

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RECONCILIATION OF LAND USES

By Frank A. Waugh, Professor of Landscape Architecture,
Massachusetts State College

Doubtless the most fundamental principle of land economics is that of reconciliation of uses. The primacy of this principle, however, has not been generally recognized, even in theory, while in practice it is constantly disregarded, with most unhappy results.

The practical application of this basic principle is most widely illustrated in the practice of agriculture and in forest administration. The farmer almost instinctively endeavors to use his entire land holdings to their fullest capacity. In this effort he uses one area for pasture, another for orchard, and another for woodlot. Or, if he thinks best, he will use his woodlot for timber production, making maple sugar, and pasture,---three several uses on the same area. Or, if on a certain plot he can grow corn, beans, and pumpkins all together, he considers the practice wholly justified. The market gardeners, the most intensive of farmers, have reduced this technique to a complex system of intercropping.

Somewhat oddly, however, the most rigorous study of this principle of reconciliation seems to have been made in that department of agriculture which is least intensive of all, viz., in forestry. The capital illustration in this country is probably the National Forests.

The popular conception of a National Forest, or of any public forest reserve, is an area of land devoted to growing trees for lumber. Yet from the outset National Forest administration has had to deal with other utilities of great importance, certain of them at times plainly overshadowing the specific objective of timber production. These require a brief recapitulation in order to emphasize what follows.

The first of these additional uses is watershed protection. This objective itself has several subdivisions: watersheds are protected (a) to conserve water for domestic use, (b) for irrigation, (c) for water power, (d) to equalize the flow of streams for navigation and manufacture, (e) to prevent soil erosion, (f) to protect fish and other wild life, and sometimes for still other purposes. In the next place, grazing early assumed a position of great importance in National Forest economy. The National Forests still supply grazing to some 8,000,000 cattle and sheep annually. Finally, (to mention only major forms of use) it was tardily discovered that the National Forests, because they necessarily comprise some of the best scenery, some of the wildest landscape, many of the streams and lakes best adapted to fishing, and the country where wild game keeps its last refuge---because of these essential facts, the forests are adapted to recreation on a large scale. Recreation has thus become a major land use coordinate with timber production, watershed protection, and grazing. These, in fact, constitute the four major branches of forestry as practiced on a national scale.

Now since each of these uses is valued in millions of dollars and is operated on areas of millions of acres, the problems of reconciliation assume a magnitude which makes their study imperative.

The first answer is almost always found in segregation of uses. Timber growing and grazing, for example, may usually be separated with little difficulty. An area of meadows, supplying good pasturage, does not produce timber trees. Other efforts at this sort of simple segregation will be mentioned presently.

It is important to notice at once, however, that this expedient is not so simple as it seems, and by no means final. As a matter of painful history we know that National Forest administration has been faced from the first by a dilemma of counter-complaints, one group showing that grazing was detrimental to the forest, especially to reproduction, another group (the stockmen) protesting that the growing of trees was robbing them of their hereditary range.

Some of the outstanding, and certainly some of the most significant, examples of reconciliation by exclusion are found in recreation use. The Adirondack Forest Preserve of the State of New York has been set aside by the drastic expedient of constitutional amendment, upon terms which exclude forever the practice of forestry, as commonly understood, from this princely domain. Even those improvement cuttings which might be conducive to final perpetuation of the forest itself are not permitted. Obviously, the idea of those who sponsored this legislation was that the Adirondack Forest was more valuable as scenery and for recreation than for any of the more prosaic forms of forest use. In this they were literally right, though their aim considerably overshot its mark.

Quite parallel examples are to be found on an even larger scale in our National Parks. Aside from all other considerations, a National Park is an area (often occupied by good forest) dedicated to exclusive recreational use. This exclusive dedication is not accidental, but has often been avowed as a sufficient public policy, since in several instances large areas have been subtracted from National Forests and converted into single-use National Parks. It is rather odd that many responsible persons, including leading foresters, have not recognized the implications of these acts which mean obviously either a hopeless ignorance on the part of the public or else a very general belief that the recreation and inspiration to be drawn from an unspoiled landscape are wholly superior to any of the ordinary "economic" uses.

Another point at which reconciliation has been difficult is found where logging and recreation come into competition, or appear to be mutually exclusive. It was this view of their highly competitive character which determined the extreme action in the case of the Adirondack State Forest and in certain areas added to the National Parks. Yet long study of this problem on the National Forests convinces me that a much higher degree of reconciliation is possible than has generally been assumed, either by lumbermen or recreationists.

For one thing a wild forest is a wild forest, not a lawn-mowed, tonsorially-kept park, and for millions of hardy citizens the wild forest is preferred by a wide margin. There is such a thing as overparking a landscape, especially a forest; and if this statement be doubted, let us refer in all charity to some of the areas recently manicured by ambitious CCC camps.

For another thing, logging operations have been enormously improved in recent years. The clean-cutting, slash-and-burn system, much too prevalent in the past, has been largely abandoned even on private forests and is wholly superseded by better methods on all public forests. The old prejudice is founded largely on the old practices, and one should be abandoned with the other.

Abundant examples are at hand to illustrate the workings of intelligent reconciliation. Timber growing and grazing have been brought into harmony over wide areas. Similarly, timber cutting and recreation have been successfully adjusted on a large scale. One specific and striking example may be cited from the Angeles National Forest where the famous Arroyo Seco is intensively used both for recreation and for domestic water supply. On the face of the case no two uses could seem less compatible, yet the extreme pressure of circumstances has forced a joint use. While final results are not perfectly ideal for either enterprise, the total utilization is far more valuable than could be gained from either recreation or water protection alone.

In fact, all argument, local bickerings excepted, might be set aside by one overwhelming observation, viz., that in the public forests of Europe (France, Germany, Czechoslovakia, and Sweden particularly) a very high degree of reconciliation has been achieved. Timber growing, game farming, water protection, and recreation are carried on side by side, often very intensively. This coordination of interests is taken for granted; it might fairly be said to represent the essence of foreign forest administration.

Constant progress toward this ideal is manifest in America. As forestry becomes better established and forest management better informed, wider and more efficient reconciliations are made. Indeed, it is the plain truth to say that reconciliation of uses is the precise index of success in forest management. Failure to make reconciliations on the other hand, is confession of palpable failure. The arbitrary erection of exclusive uses, either for timber production, water protection, or recreation, indicates clearly a lack of insight into the problems involved or a failure of administrative machinery.

All this is far from saying that multiple uses must be maintained on every acre of land. Coordination is administrative rather than wholly geographic. In a typical National Forest of a million acres, for example, some relatively small units will be used exclusively for recreation, others for protection of domestic water. Grazing and timber cutting will be largely segregated. On the larger areas, recreation and wild life protection as incidental uses will go along with grazing or timber growing or both.

While the frank recognition of this principle and its general adoption would bring about some important changes in the national administration of parks and forests, the readiest theater for effective readjustment is to be found in state organization. Here we discover, in different States and in varied degrees, four forms of land use awaiting reconciliation. These are: (a) State Parks, scenic and historic, (b) State Forests, (c) fish and game departments, (d) highway departments. It must be observed that any state highway system is, in effect, a state park system, being extensively used everywhere for recreation. In a number of States, moreover, recent legislation has created a special congeries of roadside parks as an integral part of the highway system and under the management of the highway engineers.

Now all these activities overlap; they all occupy public land; they may be reconciled and coordinated toward the public welfare or they may become bitterly competitive. In general, it is coming to be recognized that State Parks, State Forests, and wild life demand a unified administration. They are typically brought together in a state department of conservation. This leaves the highway system to go its own peculiar way, the results at times being far from edifying.

No profound study is required to see that wise coordination of all these public services would demand the best services of a super-administrator. It is to be regarded as a misfortune, therefore, that the administrative chiefs of these state conservation departments must so often, under our glorious native theory, be political appointees. It is a resounding pity that the men of wide training, long experience, and proved ability in the conservation field (of whom there are a creditable number in the United States and Canada) cannot be established permanently in such offices.

However, the case is not so hopeless as it sounds. I have known a number of these political conservationists, and the majority of them have turned out to be much more than ward-heelers and party vote-getters. Some of them have proved to be good administrators and highly useful officials. The underlying fact is that a political appointee is likely to be an adept compromiser, and compromise is almost a synonym of reconciliation in the practical field. The politician probably has real tact; if he has also a good judicious mind and will listen without prejudice to the representatives of the various parties in interest (forests, parks, wild life), he can frequently effect a working adjustment where a man of high technical qualifications might have failed.

What the country now mainly needs is a clearer recognition of the principle of reconciliation and of its primacy in administrative practice. Add to this the courage to face all the practical implications and to put them into general effect, and our land administration might be extensively and advantageously reorganized on all levels — national, state, and municipal. - From the Journal of Land and Public Utility Economics, February 1936

NEW CHECK LIST QUINTUPLETS

By Daytonius, Washington

If memory serves aright, Prof. Emanuel Fritz, an eminent faculty member of the California State University, once advanced a thesis to the effect that it would be to the best interest of society in general, and of forestry and dendrology in particular, if the members of the Forest Service Tree Name Committee (who presumably must be a bit "tetched in the haid" to belong to such a committee anyhow) were given six-months' recurrent jail sentences for any tampering with Sudworth's Check List, recommittal to the hoosegow following immediately after expiration of each prior incarceration. Of course that is one way to meet the depression and the problem of economic insecurity! However, having a growing family dependent upon him, this writer (for one), in reporting on Acting Chief Clapp's order of March 30, 1936, making five changes in the Check List, is comforted by the reflection that 3,000 miles separate the turbid Potomac from sunkist Berkeley and, hence, the physiques of all our tree name committee, save Lindberg-ladder Koehler, from the Jovelike ire of Fra. Emanuel (whose name means "God with us" -- *Amen*! We sure hope so!). An added solace is that the changes themselves were aided and abetted by the California Forest and Range Experiment Station itself, in connection with its Forest Survey maps. All-in-all, it looks like a new PWA wing to San Quentin, Alcatraz, Lorton, or Occoquan!

The five Check List changes mentioned concern four exclusively Californian species, except that one of the species laps over into southwestern Arizona a bit. All are shrubs or small trees, and none has importance for lumber - which may help to mollify Prof. Fritz a little. One change is in the English name - from "indigobush" to smokethorn for *Parosela spinosa*. The other four changes are in Latin nomenclature and involve corrections of as many sorts, viz.: (1) Of a misidentification (*Cupressus forbesii*, vice *C. guadalupensis*); (2) Of a *nomen nudum* (*Washingtonia filifera*, vice *W. filamentosa*); (3) Of a combination of priority and a homonym (*Photinia salicifolia* vice *Heteromeles arbutifolia*); and (4) As a result of the provision of both Codes that botanical nomenclature begin with Linnaeus' "Species Plantarum" (*Parosela spinosa*, vice *Dalea spinosa*). It is earnestly hoped that the "sweet reasonableness" of the full statement accompanying Dr. Clapp's order will appeal to Prof. Fritz; if not, I fear we're in for it! Come up and see us sometime, boys! Friday is visitors' day. Frankly, the only change approved by this new set-up that doesn't enthuse us is the correlation with Departmental and range plant usage in adopting Cavanilles' name *Parosela*. But we can't help ourselves. Doggone Linnaeus! If that chuckle-headed Swede hadn't muffed his own genus *Dalea* in "Species Plantarum" and thrown it into the bleachers for a four-base error, we could use it! The only hope of Dalea's restoration is that some day it may become officially a "conserved name" and, therefore, legally tenable.

An interesting feature of Acting Chief Clapp's order is a paragraph providing that p. 10-R, paragraph 4, of the National Forest Manual, is not to be construed as to prevent the correction of obvious typographical and clerical errors in the Check List, or the amendment of spelling of the English names therein to conform to generally accepted style standards of the Department Office of Information and the Government Printing Office. The practical result of this will be that, in Forest Service publications, reports, and correspondence, we can now write (for example) _Pinus ponderosa_ Dougl. (not "Laws."), sumac (instead of "sumach"), Hercules-club (instead of Hercules Club), _Salix longifolia pedicellata_ Anderss. (instead of _S. longifolia_ "_pedunculata_" Anderss.), etc., etc. In connection with my prepublication technical review of the late Mr. Sudworth's posthumous "Poplars, Principal Tree Willows, and Walnuts of the Rocky Mountain Region" (Techn. Bull. 420) critical readers must have noticed the embarrassment I was under in adhering to a number of Check List names that obviously involved typographical, clerical, and technical errors. The browse bulletin also brought up numerous cases of this sort, although Acting Forester Kneipp's contemporary Check List order of September 26, 1930, helped a lot.

BONIFICA INTEGRALE

Arthur C. Ringland, of the U. S. Forest Service, described to the Washington Section of the Society of American Foresters, at a meeting recently held at the home of Gifford Pinchot, a system of hillside terracing which is being successfully used in Italy.

The system, developed before the World War by Dr. Luigi Montanari of the Italian Forest Service, applies to the slopes of steep, stony, arid mountains much the same terracing principles that have gained some foothold in agricultural practice in the American Southeast and Midwest. Terraces, reinforced with stones dug out of the soil on the spot, are laid horizontally along the slopes of the hills. The soil is well loosened, to absorb water that would otherwise run off and score the hillside with fast-eroding gullies. At intervals along the terraces, or "gradoni" as the Italians call them, the young trees are planted. The standard spacing of the terraces is twenty feet, but this is varied to meet local conditions.

This system of putting terraced forests on the sides of Italian hills, many of which have been deforested for centuries, is being worked in as an essential part of the Italian system of soil conservation, which the Italians call "bonifica integrale", or integrated conservation. Other features include the damming of the deeper gullies, and the checking of drifting dunes by means of suitable plantings.

"Gradoni" forestation has had the unique distinction of being used to convert a whole mountain into a monument. When the seven hundredth anniversary of the death of St. Francis of Assisi was celebrated, it was at first proposed to erect a great stone statue of this best beloved of Italy's many saints. But then it was suggested that Mount Subacio, the mountain that overlooks Assisi and was intimately associated with many phases of the life of St. Francis, might be reforested under the new "gradoni" system, and dedicated in place of the stone monument. St. Francis's love for birds and wild things generally, celebrated in a thousand poetic legends, cast the deciding vote. The tree-clad mountain, not the stone monument, was made his memorial.

YE EDITOR DISCOVERS

The Forest Service has been watching the progress of flood control legislation very closely. On March 19 Senator Copeland introduced a rather general bill providing for surveys by the Army of the flood situation in the United States. Even before the disastrous floods which swept the Atlantic seaboard were a thing of the past, the Forest Service furnished the Department with suggestions as to how the Forest Service could fit into the flood program. This involved three features: (1) extension of the National Forest system, (2) the development of the National Forests to make them better able to serve the purposes of soil and water conservation, and (3) research to determine the best practices. Following this, the Soil Conservation Service and the Forest Service together reworked the original Copeland Bill to include the elimination of land misuse as a corollary of large dam construction. This was agreed to by the Corps of Engineers of the War Department. The President has indicated his interest in the matter but has asked that legislation be temporarily delayed until he has had an opportunity to review the whole situation. The matter is now resting in the President's hands while Congress is struggling with other measures.

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The new travel regulations announce that time, and thereby salary, saved as the result of airplane travel justifies this mode of travel. This ruling is of much interest to those who have had disallowances in their expense accounts for such items. The Chief, for example, has been hit hard in this respect on trips taken to the Far West and to Puerto Rico.

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Among the legislative measures now receiving the active consideration of Congress is Bill H. R. 7086, introduced by Representative Wallgren of Washington, to create the Mount Olympus National Park. As described in the bill, the proposed park would include a total area of 667,089 acres, of which 298,730 acres is the area now comprising the Mount Olympus National Monument, 353,060 acres is additional National Forest land, and 15,299 acres is privately owned land.

The proposed Park would embrace 42 percent of the present gross area of the Olympic National Forest. It would include 43.3 percent, or 17,434,000,000 board feet of the estimated total volume of timber within the National Forest boundaries. It would include lands with an estimated potential annual sustained yield production of 192 million board feet, which if utilized under practicable principles of sustained yield should be capable of supporting a population of approximately 19,375 people.

As against a Park proposal, the Forest Service has suggested a plan of management under which approximately 567,000 acres, including the National Monument area, would be recognized as possessing outstanding inspirational and recreational values and would be managed accordingly. Within the area thus defined by the Forest Service approximately 6 billion feet of the virgin stand of timber would be safeguarded from cutting. Other principles of management, such as the elimination of practically all road construction and the restriction of development to simple and appropriate types, would be scrupulously enforced. In addition, steps would be taken to preserve adequate marginal fringes of virgin timber along the major approach roads. Under this plan substantially all inspirational values would be conserved with limited interference with the potentialities of the area for the permanent support of the resident population.

During the past two years this proposal has probably dominated all other topics in local thought, having been the subject of numerous mass meetings, conferences, resolutions, communications, etc. In the process of finding itself, local public sentiment has fluctuated from one viewpoint to another but gradually has coalesced into the preponderant opinion in support of the type of forest management suggested by the Forest Service

The latest word is that the House Committee on Public Lands will hold hearings on the Bill H. R. 7086 on April 23. At that time the two divergent philosophies of land use management will be laid before the committee in detail, with all the related social and economic considerations inherent in the proposal, and some final conclusion doubtless will be arrived at by the committee; possibly by the Congress.

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Region 9 in southern Missouri and southern Illinois is getting the baptism of fire that almost always accompanies the organization of new National Forest Units in regions where the population has become addicted to systematic burning. Recent news reports indicate that southern Missouri and southern Illinois suffered in one ten-day period 472 fires, which burned over 28,300 acres of National Forest Land. Since the first of the year, these areas have had 1,087 fires which have burned over approximately 48,000 acres.

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Lumberman Rhinehart of the Coconino Forest now has to train himself to write a new designation date on his timber sale reports. That is worse than learning to write 1936 instead of 1935. He recently sent in a final Form 820, bearing the number 158, on the Arizona Lumber and Timber Company sale of 7/8/25, known as the Oak Creek sale. The logs cut numbered 677,940 with a net scale of over 109,500 M. The stumpage payments ran to $306,636.82. And Rhinehart is ready to prove to anyone that the sale area is playing its part in making the Flagstaff Working Circle work as a means of supporting a permanent timber industry with opportunities for permanent employment. The Company is now operating on other sales in the Working Circle.

WASHINGTON OFFICE PERSONNEL CHANGES

Secretary Wallace has confirmed the appointment of C. E. Rachford as Assistant Chief in the Forest Service. Mr. Rachford will serve in an advisory capacity to the Chief.

The Chief's staff now consists of the Associate Chief, Earle H. Clapp; two Assistant Chiefs, E. A. Sherman and C. E. Rachford, who serve without portfolio; and the Assistant Chiefs in charge of the respective Branches.

The appointment of Earl W. Loveridge as Assistant Chief in charge of the service divisions also has been confirmed. Mr. Loveridge has been acting in this capacity.

Dana Parkinson, formerly of Region 4, has been appointed to serve as Chief of the Division of Information, Publication and Education.

Walt L. Dutton, of Region 6, has been selected to succeed Mr. Rachford in charge of the Division of Range Management.

WANTED!

Regional Forester Kircher is exceedingly anxious to get some extra copies of Technical Bulletin 492, "Artificial Reforestation in the Southern Pine Region," the supply of which has been exhausted.

If you should have a copy which you do not need, he would greatly appreciate receiving it. Just when a reprint will be issued is unknown.

E. R. A. PROGRESS REPORT-MEN WORKING

Based on Monthly Schedules From Weekly Reports During the Month

Week ending April 11, 1936.

Number of Relief Rollers plus Ten Percenters			Percent of Schedule				
Scheduled to employ this week		Actually employed this week	This week	Previous week	Month of March	Month of Feb.	9 Mos. incl. March.
Gr. Tot.	15,090	14,897	99 %	95 %	116 %	121 %	106 %
R-1	2,300	1,305	57	57	247	319	133
2	450	240	53	49	53	83	115
3	800	851	106	105	110	105	101
4	750	446	60	58	66	94	112
5	1,429	1,064	75	75	84	116	115
6	1,353	1,343	99	97	97	95	99
7	1,066	1,253	118	119	125	119	118
8	1,600	2,744	172	161	149	125	102
9	1,546	1,897	123	121	132	120	105
10	70	42	60	107	130	216	79
SB.	2,747	2,855	104	94	106	115	78
RES.	979	857	88	85	96	94	93

THE PROTECTIVE INFLUENCE OF THE FOREST

Statistical studies show that well-timbered forests in the Lake States are relatively safe from fire. Once the timber is clean cut, however, and the land exposed to the sun and wind, fire hazard increases tremendously.

The northern hardwood-hemlock forest furnishes an excellent illustration. This type when in a virgin condition is as nearly fireproof as any type of forest in the region, but the removal of the protecting influence of the old forest immediately changes the situation and allows the elements to have full play.

How greatly the overhead shade reduces the wind and temperature (the two factors chiefly responsible for drying the forest) are shown by the results of 5 years of detailed weather records taken at the Upper Peninsula Experimental Forest near Marquette, Michigan. Records were taken both in the open and in the virgin forest.

Average Soil Temperature at One Inch Depth in Degrees F.

Station	May	June	July	August	Sept.
Open	52.1	62.4	69.5	66.7	57.4
Forest	48.6	55.2	60.2	59.0	55.2

The reduction of soil temperatures caused by the forest cover although important is not as striking as the effect on wind movement. During the summer period the wind is nearly three times as strong in the open as in the forest, as shown in the following table:

Average Daily Wind Movement in Miles at Fifteen Foot Level

Station	May	June	July	August	Sept.	Oct.
Open	96.2	79.6	63.2	59.2	65.3	89.3
Forest	51.6	25.6	14.5	16.4	17.3	37.4

- Technical Note. Lake States For. Expt. Sta.

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SERVICE BULLETIN

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>
> Theodore Roosevelt

Vol. No. 10 Washington, D. C. May 11, 1936

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THE HUNGARIAN-AMERICAN LOCUST

By E. N. Munns, Washington

We need black locust seed. We need it by the ton!

Where can such quantities be procured? Our own stocks have been exhausted!

This question was raised in 1933 by many foresters in the Forest Service, in the States, in the CCC, in the TVA, and in other organizations on whom had been thrust a big job of providing work through reforestation.

But, Europe offered locust seed, any quantity of it, and tons and tons of this seed were purchased.

Most of this seed came from Hungary, a remnant of the former Austria-Hungary empire, a patch of plain and sandhill along the middle Danube left to the Hungarians after the Treaty of Trianon. Here of all places, our own American black locust was growing, widely planted and greatly appreciated.

The story of how the locust got to Europe, how it came to be widely used in Hungary, and how it is that we now can obtain more seed from Europe than we can ourselves collect is truly a forestry epic.

The black locust was introduced into Hungary by early travelers sometime between 1700 and 1730. Rumor has it that it was taken there from England where it had been introduced by 1680. A curiosity at first, the tree was used as an ornamental, greatly prized for its open shade and beautiful flowers. Here the tree also developed the habit of producing flowers before the leaves. In 1806, a royal decree mentioned the locust as one of the species that should be used in planting operations. The locust, however, was not widely used, as attested by planting reports as late as 1835.

Most of these Hungarian planting operations, other than on cut-over pine and spruce lands, were on inland sand dunes, of which there were perhaps 10 million acres. These wastes, adjoining the agricultural lands, were a source of great trouble and damage as the shifting sands threatened or covered homes, fields, and roads. Indeed, blow sand from these areas under the strong "Kossova" winds in both spring and fall often prevented navigation on the Danube and stopped all forms of land transportation. Various efforts were made to control these dunes, including tree planting. The principal species used were pine, willow and aspen, and even fruit trees, but these were of little use against the moving sand. However, it was not until about 1850 that locust was used to any extent, when trial had demonstrated that the tree could stand all kinds of hardship and thrive under dune conditions. In

1853, 374 pounds of seed were used in Deliblat, 200 pounds of which are known to have come from an American source, somewhere near Philadelphia.

However, it was not until 1873 that the locust was really appreciated as a dune-control plant. Wessely, in charge of planting of the "Puszta of Vacs," (a great sand waste) remarked that "the locust had been invented in North America just for the sandy Hungarian plains." This expression captured the imagination of the local foresters to such an extent that locust has been grown extensively. Now, because most of the forests originally possessed by the Hungarians have been given by the Trianon Treaty to other Nations, almost the only forest land left to the Hungarians are the sand plains and almost the only forest they have is of locust. At the present time over 200,000 acres of this sandy waste is forested to pure stands of locust.

No wonder we can get seed in abundance from Hungary!

"RANGER JIM" NOW A FOREST RANGER

On Friday, May 22, the 200th program in the radio series "Uncle Sam's Forest Rangers" will be presented by the National Broadcasting Company from its Chicago studios. As an expression of the Forest Service's appreciation of the outstanding work of Harvey Hayes for the past four years in the role of "Forest Ranger Jim Robbins", Mr. Hayes is being made an honorary member of the Forest Service with the title of Forest Ranger.

It is expected that George A. Duthie, of the Division of Information, will pin a badge on Actor Hayes in a little presentation ceremony to be broadcast May 22. The following letter to Mr. Hayes is from the Chief of the Forest Service:

Dear Mr. Hayes:

It is my great pleasure to inform you of your appointment as an honorary Forest Ranger of the United States Forest Service. This appointment comes to you in recognition of your outstanding service in behalf of forest conservation. It also comes to you on the occasion of your two-hundredth broadcast in the National Broadcasting Company's program, "Uncle Sam's Forest Rangers." As "Forest Ranger Jim Robbins," during the past four years you have endeared yourself to untold thousands throughout the United States, and you have performed valuable public service in stimulating interest in, and increasing knowledge of our important forest problems.

You are to report for duty at once, and I hereby charge you with the following duties: First, to continue to administer honorably and efficiently the Pine Cone District of Radioland's National Forest; second, to render continuing service to the public in the traditional manner of Forest Rangers, fairly and without discrimination, promoting always the protection, conservation, and wise use of our forest lands, and thus contributing to the welfare of our country and its people.

With heartiest greetings and good wishes, I am

Very sincerely yours,
(Signed) F. A. SILCOX
Chief, Forest Service.

TO CODDLE OR NOT TO CODDLE

The following letter from L. A. Barrett, Assistant Regional Forester of Recreation and Lands, R-5, to Jno. D. Guthrie is quoted:

"As my final 'swan song' on recreation before stepping out of the Forest Service, I want to say 'Amen' to your article in the March 30 Service Bulletin entitled 'Coddling Our Campers.'

"For some 50 years the writer has been a camper. I have camped all over the West from the Wichita Hills to the Pacific Beaches; from the Rio Grande to the Canadian Line, and in Lower California and the Philippines. And I agree with the California camper you quote, that if camp life is to be a replica of home life, what's the use of going camping.

"Now I consider the Forest Service the finest governmental organization in America. If I had my life job to plan all over again I would want it to be in the Forest Service. But we are prone at times to go 'hog wild' on something new that comes along, and this 'deluxe' camp ground development is along that line.

"It is my firm conviction, after 'wrestling' for 26 years with the heaviest recreational use of any region in the Forest Service, that we should confine camp ground improvements to the essentials that fit in with the Forest background and with a life in the woods, and should leave out the 'frills.' Remember that we can always put in these 'frills' in the years to come if future generations demand them, but if we put them in now we are 'sunk', for we can never eliminate them."

FOREST FALSE FRONTS

By W. V. Kennedy, Ottawa

Only within comparatively recent years has any real attention been paid to our roadsides. Travelers thought that debris, slash, charred stumps, dilapidated fences and signboards were just unfortunate items which must be endured in touring the country. They were placed in the same category as flat tires or motor trouble. It was all in the game of travel and must be accepted as such.

In the last few years, however, we have awakened to the fact that we need not penetrate far from the main roads to obtain the cool, restful effect of trees arching over the road. It should not be necessary for us to drive in poor, sandy, deeply rutted roads to avoid the objectionable sights which formerly graced our main highways. What measures does the immaculate housewife employ if there is a hole in the plaster of the wall in her home? Quite simple--she screens it--she hangs a picture so that it hides the damage. Such is the method employed in roadside beautification. Borrow pits, gravel pits, signs, fences, etc., all tend to mar roadside landscapes and should be screened or removed.

It has been proven by various public agencies that the average tourist does not penetrate over 100 feet from the road when he stops for his recreational enjoyment. If the acres and acres of charred stumps are hidden by a 200 foot strip of timber, a favorable impression is made upon this visitor. He has been pleasantly surprised by the "false front". He probably believes the entire forest is virgin, after viewing the roadside strip. We do not wish to practice deceit, but we do believe that by improving our roadsides we actually fulfill the entire Forest Service policy in its fullest sense: to do the greatest good to the greatest number of people over the largest period of time. We can think of no other one activity which so directly complies with this policy as does roadside beautification.

We have but three main methods of obtaining roadside strips which are as follows:

1. Planting--Probably the most difficult method of getting a satisfactory roadside strip, as a good many years must elapse before we have a satisfactory stand.

2. Exchange--The possibility of exchanging government timbered roadside strips should be given serious consideration.

3. Purchase--This is the best manner in preserving roadsides. An outright purchase of this land, with due consideration for its increased valuation because of its proximity to the road, is desired. It is suggested, and I believe the suggestion merits considerable thought, that the purchase of roadside strips be placed first in priority in our acquisition program. This suggestion is made because instead of acquiring roadside timber we are steadily, month by month losing it by logging. Lumbermen cannot be expected to resist logging this timber when taxes have already cut such a large chunk out of their profits. Because this timber is the most accessible, the steady stream of logging trucks carry off many logs that once graced the sides of our beautiful roadways.

I have been fortunate in obtaining a report prepared by the County Engineer of Gogebic County, Mr. George W. Koronski, in which he clearly points out the value of roadside strips in monetary terms as well as the intangible benefits. The following information has been obtained from his report on conditions in Gogebic County and, as a large portion of the Gogebic unit of the Ottawa lies in this County, the figures would probably be fairly accurate for the entire forest.

The question of roadside timber comes up spasmodically, usually just at the time when a logger begins to cut the timber and destroy the beauty of the roadside.

The following questions naturally arise:

How much does it cost to preserve it?

How wide a right-of-way is necessary?

What is its value? In summer? In winter?

The minimum width of virgin timbered rights-of-way on the Ottawa should be 200-feet on either side of the road allowing 66 feet for the roadbed itself. That would total to a 466 foot right-of-way. A width of less than 200 feet of standing timber will not survive the action of the winds and will soon look scraggly and wind-blown and its value will be lost.

A 200-foot strip contains 24.28 acres per mile or 48.56 acres per mile for both sides of a road. If purchased before any logging operations had taken place, the cost would be approximately:

$50 per acre or,

$1,214 for a 200-foot strip or,

$2,428 for a 400-foot strip of right-of-way.

The esthetic value of roadside timber should not be figured in hard dollars but in sense. Can you count the wonderful feeling that steals over one, so adequately expressed by the poet as he passed through the murmuring pines and the hemlocks bearded in moss and in garments green, silhouetted indistinctly in the twilight? Can you count in dollars the peaceful and contented feeling the stately maples offer? Have you ever seen the beauties of the primeval forest in the fall when each leaf seems painted by an angel to form the most magnificant display of colors which man can behold? Have you seen these forests dressed in their silvery topcoats, glistening and sparkling like diamonds, after a fresh snowfall? Have you seen the deer scamper out of the woods and stop in the middle of the road to watch you approach and then retreat back to the timber to hide and watch you pass by? If you have not seen all of these pictures you have missed God's given priveleges. These should not be counted in dollars alone, for are not these the prerequisites necessary for the tourists if we expect them to visit us?

The monetary value of timbered rights-of-way is strikingly brought out by a discussion of snow plowing in Gogebic County which, although it lies in a snow belt, does not have more than 18 feet of snow during the entire season.

The following table shows the cost of snow fence with a 10-year depreciation.

Cost of 1000 ft. of snow fence each year.

Original cost	$65.00
Posts	34.50
	99.50

Investment (10-year period)	$9.95
Erection	7.50
Taking down	3.75
Raising during winter	10.00
Tie wire	1.30
Annual cost per year without charge for overhead	$32.50

As the natural protection of our roads decreases, the necessity for snow fence increases. The Gogebic County Road Commission is using 30 miles of snow fence at the present time and it is estimated that 30 more miles is needed before its roads could be considered adequately snowfenced.

Snow plowing may be divided into four parts:

First. Sheltered areas, timbered areas which include all trees that form a natural snow fence on both sides of the road.

Second. Semi-sheltered areas, which include all areas partly sheltered by natural growth of timber or second growth or brush, but which must be partly protected by snow fence.

Third. Windswept areas, roads which have no natural protection on which snow fences must be used.

Fourth. Windswept areas which have no protection because of the lack of snow fence, either natural or artificial.

(To be continued in next issue)

SHASTA HAS WINTER FIRE

Not since the historic Sisson Fire of 1914 have the fire fighting annuals of the Shasta Forest been enriched by such a one as occurred March 19 to 21. The Sisson Fire was fought in the heat of summer but the Lueck- nicknamed "Hard Luck" fire - was of the winter sports variety, with the sports left out.

When Mr. Lueck set fire to some brush a few miles back of Mt. Shasta City, in order to clear the land for building, a little after noon on March 19, a south wind, 18 miles per hour, spread it over 400 acres. That night the wind switched to the north and speeded up to 35 m.p.h., driving the flames back between the McCloud River railroad and the Copco power line over 2500 additional acres. It also brought on Arctic conditions to the Shasta force and 500 CCC boys from about eight camps in that territory.

"Cat" drivers clad in sheepskin coats wrapped six blankets around them to keep out the wind. A hose on a large tanker froze up while in operation. An airplane brought from Oakland for scouting was tied down, wings and tail, at the Mott Airport, to keep it from flying away by itself. Supervisor Bachman and C. A. Gustafson, R.O., stalled their auto in a snow bank 200 yards from the fire line and had to be dug out by CCC's. One veteran fire fighter swore that he never before had spent such miserable nights on a fire, and those who had once facetiously advocated the fighting of forest fires in the winter decided that summer was the right season after all. Even a small snow storm the night of the March 21 which cooled the burned area, brought little cheer to the shivering crews.

The fire camp was in the Forest Service warehouse at Mt. Shasta City and the Principal of the grammar school effectively cooperated by turning the heated gymnasium into sleeping quarters. Five Army doctors set up hospital tents near the fire lines and a few men were treated for exposure only, as there were no injuries. Major G. S. Clark, Commanding Officer of the Redding district, was there as were the Commanders of the Fawn Lodge, Digger Butte, Sims, Happy Camp, Saw Creek, Leaf, and Oak Knoll Camps.

The damage included 700 acres of Government land and the whole area was from one-third to one-half stocked with pine reproduction. - From R-5 Bulletin

PHOTOGRAPHIC WORK SHOWS BIG INCREASE FOR 1935

By G. H. Lautz, Washington

The output of the Washington Photographic Laboratory of the Division of Engineering for 1935 is more than double the amount for 1934. Most of this increase is due to work being done for the Resettlement Administration. However, the Forest Service demands for work have increased considerably in the past six months as indicated in the following table:

Description	1935 July 1 to Dec. 31				1934 July 1 to Dec. 31
	Units	Total	Resettlement Administration	F.S.*	F.S.*
Blueprints) Bluelines) Van Dykes)	Sq.Ft.	170,789	91,540	79,249	51,062
Wet Plate	"	3,930	739	3,191	3,307
Solar Bromides	"	17,103	2,838	14,265	16,632
Photostats	"	95,713	59,240	36,473	19,621
Mounting Maps	"	30,779	2,213	28,566	16,070
Bromide Enlargements	"	1,567	747	820	829
Total Sq. Ft. Output	"	319,881	157,317	162,564	107,521
Developing Films	No.	5,454	538	4,916	4,995
Copying Prints	"	366	77	289	195
Mounting Prints	"	1,936	195	1,741	655
Lantern Slides	"	1,210	-	1,210	1,654
Photo View Prints	"	61,313	1,681	59,632	43,195
Total Unit Output	"	70,279	2,491	67,788	50,694
Employees		30	-	-	13

*Includes a small amount of work for other Government Bureaus and Cooperative sales.

A $4,000 continuous photostat machine was installed on October 17, 1935. This is capable of turning out two sheets a minute and with two men operating, it is capable of turning out more than 20,000 sq. ft. per month. The old machine, which is not automatic, could, with two men working two seven-hour shifts, turn out at the most 16,000 sq. ft. in the same period.

A new $1,500 photo enlarging camera was installed about the same time. Previously all enlarging had been done with a camera which was purchased second hand at least 35 years ago. The new camera is capable of turning out better enlargements in half the time required by the other.

The purchase of a $1,200 copying camera is now under way. This will use films up to 24x24 inches and take the place of a 25 year old plate camera. It will have more speed, flexibility and precision and will have the added advantage of permitting the storage of films for future use; permit sending them to the field; and the preparation of films for reproduction by multilith.

This equipment must all be purchased from funds earned by photography.

YE EDITOR DISCOVERS

Chief F. A. Silcox and Assistant Chief C. E. Rachford have been selected by the Carl Schurz Memorial Foundation to study forestry conditions in Europe this summer. The countries they expect to visit are: England, Norway, Sweden, Hungary, Switzerland, Germany, France, Italy, and Spain.

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Representative Richard M. Kleberg of Texas on April 28 introduced a bill (H.R. 12498) to provide for assembling in the Department of Agriculture all functions of the Federal Government relating to the conservation of the soils and organic resources of the country. Under the provisions of the bill the Department of Agriculture would be responsible for planning, directing, or encouraging the use, management, and conservation of such resources both as an administrator of public lands and in its cooperative and extension activities as to private lands. The only exceptions would be in the case of federally owned or controlled lands managed by other federal agencies primarily for purposes other than the use of their organic resources, such as the National Parks, Indian Reservations, etc.

In order to give effect to this broad policy, the bill provides for the transfer to the Department of Agriculture of administration of all laws relating to the organic resources of the public domain, both in the United States and Alaska. There would be transferred to Agriculture the Grazing Division of the Department of the Interior, and all functions now lodged in the Reclamation Service except those of a strictly engineering character. Only lands certified by the Secretary of Agriculture could be opened to entry under the public land laws for agriculture, grazing, or timber and stone. The bill would give effect to a principle of organization which has been widely advocated. The bill also transfers to the Department of Agriculture entire jurisdiction over all National Monuments now existing or hereafter created within the boundaries of the National Forests. The effective date of the new arrangement as provided in the bill would be July 1, 1936.

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It became necessary the other day to produce an estimate of the number of separate employments of men for fire fighting. The first estimate assumed that on the average 3 men are used on each Class A fire; 6 are used on each Class B fire; and 50 are used on each Class C fire. If so, the number of separate employments for fire fighting during the calendar year 1935 was 119,785. This number was considered to be so large that it would seem incredible. Accordingly, the average number of men employed per fire was reduced to 2, 4, and 20 for Class A, B, and C fires, respectively. This reduced the total number of employments during the year to 57,590, which is probably less than the actual number employed, but which is a figure that is more likely to be believed.

In order to present adequately the magnitude of the Forest Service job of high speed emergency mobilization of large numbers of men it may be necessary eventually to ask Fiscal Agents to report the number of separate FF checks issued for personal services during the course of a calendar year.

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On April 24 the Senate adopted a resolution (S. Res. 289) proposed by Senator Norris of Nebraska calling on the Secretary of Agriculture for a report on the western ranges. The Forest Service's range report was transmitted to the Senate on April 28.

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Approximately 5500 papers were submitted on the recent Assistant to Technician unassembled examination. Forest Officers from Regions 7, 8, and 9, and the Washington Office have been detailed to grade these papers. It is estimated that the job will involve a total of 70 man-days of work.

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Vocational training of enrollees in the CCC camps in Region 4 is beginning to show results. That Region is now issuing a certificate of proficiency from the Forest Service in vocational training to enrollees who finish the course and demonstrate their ability in such things as operating a compressor, in handling powder, in operating a jackhammer, or in the care and operation of a tractor. These certificates bear the signature of the Company Commander, the Project Superintendent, the Educational Adviser, and are countersigned by the Regional Forester. The first group of about 20 certificates have just been signed.

AUSTIN CARY

As the Service Bulletin goes to press we are shocked to learn of the sudden death of Austin Cary at Gainesville, Florida, April 28 at 10 A.M.

Dr. Cary retired from the Forest Service on July 31, last. He had been actively engaged in forestry since 1893, or for more than forty-two years. His retirement did not, however, deter him from continuing in the work in which he was so vitally interested. During the past months it has been an inspiration to see this stalwart forester pursuing the work to which he has devoted his life with undiminished zeal and with even increased enthusiasm after being honorably retired from Government service in which, prior to retirement, he had been continuously employed for twenty-five years. In a recent letter commenting upon his present activities he indicated that his work had never interested him more. What a splendid tribute to the work and to the man this is!

Dr. Cary had a certain priceless intellectual integrity which gave to his expressions rare value. One could be always certain of getting genuine opinions from this man. His conclusions were considered, and the positions which he took upon the many important problems with which he was concerned represented his convictions expressed calmly and fairly, but without fear or favor. He was singularly devoted to the progress of forestry, and few men have had greater influence with the private timberland owner in putting forestry into the woods. - A. B. Hastings

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

Vol. XX No. 11 Washington, D. C. May 25, 1936

SECRETARY WALLACE TRANSMITS RANGE REPORT

The following, in part, is the Secretary's letter of transmittal of the Range Report prepared in response to Senate Resolution 289, introduced by Senator Norris.

"In transmitting this report I shall resist the temptation, despite my great personal interest in the range question, to comment at length on its findings and recommendations, and instead merely emphasize three of the most important phases of the discussion.

"1. The first of these is the astonishing degree to which the western range resource has been neglected, despite its magnitude and importance.

"One indication of this neglect is the lack of public knowledge. The general public knows less of the range resource, and as a result has been and is less concerned about its condition and conservation, than of any other of our important national resources. This is true in spite of the fact that the range occupies about two-fifths of the total land area of the United States and three-fourths of that of the range country; that the range territory produces about 75 percent of the national output of wool and mohair, and in pounds about 55 percent of the sheep and lambs, and nearly one-third of the cattle and calves. In fact, this report represents the first attempt, although much of the range has been grazed for 50 years at least, to make an all-inclusive survey of the range resource, its original and present condition, the causes and effects of changes, the social and economic function which it does and should render to the West and to the Nation, and finally, to outline practical solutions for at least the more important problems.

"The entire history of public land disposal under both Federal and State laws reflects this neglect. These laws have with few exceptions been framed and administered without regard to range conditions and requirements. The result is an ownership pattern so complex that satisfactory handling of the range is seriously handicapped. In this pattern is intermingled an enormous area that all of the available information indicates is submarginal for private ownership.

"Further evidence of neglect is failure to regulate the use of range lands in such a way as to maintain the resource. This failure has been so general under all classes of ownership that in contrast examples of good management are decidedly conspicuous. The result is serious and practically universal range and soil depletion, which already has gone far toward the creation of a permanent desert over enormous areas. An even more serious result has been an appalling waste of the human resource. And three-fourths of the range area is still on the down grade.

"The commonly accepted theory that private ownership in itself is enough of an incentive to insure the satisfactory handling of range lands has proved to be true only in the case of exceptional ranches. State range lands have been leased without provision for the management of the resource or its perpetuation. Federal holdings are scattered among many bureaus in several Departments. The National Forests, which afford an example of large-scale range conservation, are administered by the Department of Agriculture. The grazing districts, which are only now being placed under administration after a half century or more of neglect, and the public domain, which is still subject to unrestricted use, fall under the Department of the Interior. These three classes of land make up the bulk of Federal holdings.

"Neglect is further shown by the meager scale of research by both the Federal and State Governments. A reasonable program of research might have prevented many serious mistakes and maladjustments. Extension to carry research findings in better range practices to private owners has been practically nonexistent.

"2. The second phase of the situation to which I wish to call attention is the fundamental character both of the range resource and of its use.

"They have to do with land; with the production on that land of forage crops, with the utilization of the crops in livestock and, in a lesser degree, wildlife production; with the management of land and its forage cover to obtain watershed protection and the services needed primarily by agriculture for irrigation. Effectiveness in all of these things depends upon the biological and agricultural sciences. In short, they are a part, and in the West one of the most important parts, of agriculture.

"Furthermore, through the free play of economic forces, range livestock production -- once almost wholly an independent pastoral enterprise -- and crop land agriculture have become closely integrated, inseparable parts of the agricultural structure of the West. Except for specialty farms, a high percentage of the hundreds of thousands of western farm or ranch units represent widely varying combinations of range and crop agriculture. More than one-third of the feed for range livestock now comes from crop lands or irrigated pastures. Problems of one part have become problems of both. Major maladjustments in either -- of which there are far too many -- now inevitably affect the other. No comprehensive program can be prepared for either which does not take the other definitely into account.

"3. The third phase of the range situation to which I wish to call attention is a limited number of remedial measures of outstanding importance among the many that are required. The range problem as a whole has been allowed to drift for so long that its difficulties have been accentuated. It has become exceedingly broad and complex, beginning with the basic soil resource at the one extreme and extending through a wide range of overlapping interrelated problems to human welfare at the other. No single measure offers hope of more than a partial solution.

"One of the most important of the measures required is to place all range lands under management that will stop depletion and restore and thereafter maintain the resource in perpetuity, while at the same time permitting its use. This will involve many difficult operations such, for example, as drastic reductions of stock on overgrazed ranges. It will involve various forms of use such as livestock grazing, watershed services, wildlife production, etc., which should be so correlated as to obtain the maximum private and public benefits.

"A second line of action involves the return to public ownership of lands so low in productivity, or so seriously devastated, or requiring such large expenditures to protect high public values, that private owners can hold them only at a loss. Closely related are a far-reaching series of adjustments in size of ownership units to make both private and public ownership feasible and effective, each in its proper sphere.

"A third line of action is to put jurisdiction over publicly owned range lands on a sound basis. Unquestionably the only plan which can be defended is to concentrate responsibility for the administration of Federal lands in a single Department to avoid unnecessary duplications, excessive expenditures, and fundamental differences in policies, and to obtain the highest efficiency in administration and the maximum of service to users. Since the administration of the range resource and its use is agriculture, and since the administration of Federally owned ranges can and should be used as an affirmative means in the rehabilitation of western agriculture, the grazing districts and the public domain should be transferred to the Department of Agriculture.

"Furthermore, the concentration of jurisdiction over Federally owned range lands is a vitally important step toward the concentration in a single Department of the still more inclusive functions, including aid and services to private owners of range lands, which should be exercised by the Federal Government on the entire range problem. Such a concentration is a fundamental principle of good organization if the Federal Government is to redeem its full responsibility in the restoration and care of this much-neglected resource.

"The States have similar jurisdictional problems which demand attention.

"A fourth measure which should be emphasized is the wide scope of research necessary to put range use for all purposes on a sound footing. Closely related is extension which will carry the information obtained to the private owner and help him constructively in its application.

"With these and other recommendations of the Forest Service I am in general accord and I hope that in carrying them out there need not be too serious a delay, since further delay will merely serve to accentuate difficulties and increase costs.

"The solution of the range problem can be made an important contribution to the conservation of our natural resources. It can be made an important contribution to the rehabilitation of western agriculture. Finally, and most important, it can be made an important contribution to social and economic security and human welfare. Public neglect is partly responsible for the aggravated character of the range problem, and this makes all the more urgent and necessary public action toward its solution."

SUMMER FALLOW

By B. H. Mace, Sierra

As the time draws near when I will be sitting on the side lines watching the game from a more or less detached point of view, I feel more and more inclined to hash things over and live again the days that nothing can bring back. I am a firm believer in living in the present and would be the last to advocate going back to tallow candles and horse and buggy transportation; but, nevertheless, I get a lot of enjoyment out of thinking over the many and varied experiences of a lifetime spent in the forests of California.

My earliest recollections are of trees and meadows; the song of the crosscut saw with the noise of giant trees crashing to the ground; the sound and aroma of sawmills; long teams of oxen straining against the yoke to move huge block-wheel trucks laden with logs; and twelve mule teams with jangling harness and jingling bells hauling two and three wagons loaded with lumber or round timbers for the Mother Lode mines; of evenings in the "big" room with its six foot fireplace and bearded pioneers of a still earlier day telling personal experiences of fights with Indians and grizzlies and displaying scars of arrow and claw.

It is small wonder that I stayed in the forest, "skinned mules", "punched bulls" and, otherwise, took my living from the forest. After several years of this kind of work, mixed with cattle raising and farming, we began to hear about Forest Rangers. The Government had reserved all the remaining Government forest land and was putting a stop to timber cutting and shake making, and was even threatening to make people pay for taking cattle to the mountains. This did not affect me personally, as my father had foreseen that this would happen eventually and had acquired title to all the timber and range we needed. In fact, it benefited us by relieving us of unfair competition with men who were taking Government timber and range without paying for it. There was a wild scramble about this time by most of our competitors to get title under the various land acts, but most of them were too late.

Not long after this I read in the local paper that a Civil Service examination for Rangers was to be held in Sonora and decided to go over and see what it was all about. The result was that I took the examination and thanks to my timber and range work was able to make a passing grade. Later that same year, 1908, I received an offer from Supervisor Charles H. Shinn of a job on the Sierra National Forest at Northfork, California. I remember I had some difficulty locating Northfork, but that problem being settled I packed up and made the four day horseback ride from my home to Northfork. My young wife and baby followed shortly after and from that time until the present the three of us have kept fairly close together.

We brought sixty dollars with us and resolved that if we ever went broke on the job we would quit. Many times later we found ourselves near the breaking point but always managed to pull through.

Things were pretty crude on the forests in those days. Even with a "Teddy" Roosevelt for President, a Gifford Pinchot for Forester, and a Charles H. Shinn for Supervisor, all men of persistence and vision, it was next to impossible to get money for any but the most obviously necessary projects.

There were plenty of Rangers but very little money to hire temporary laborers; so, Rangers were often made up in crews to build fences, bridges and cabins. Most ranger houses were shake sided cabins put wherever a patch of horse pasture was located on Government land, as, with low salaries and no Government purchased horse feed, it was thought necessary to provide as much pasture as possible to cut down the feed bill.

Mr. Shinn, our Supervisor, was a remarkable man in many ways, but outstanding among his better qualities was his ability to instill in a bunch of young rangers and their wives a feeling of loyalty to each other and above all to the Sierra. I don't think any man or woman who started on the Sierra in those days ever entirely outgrew that influence and even today when Forest Officers meet it is a standing joke that if there are two or three old Sierraites in a group, the meeting will degenerate into a "brag fest".

I left the Sierra after four years and with all due regard for the several other Forests on which I have worked, I welcomed the chance to come back to the Sierra to finish my term of service.

One could hardly spend half a lifetime of field work in the Forest Service without having numberless out-of-the-ordinary experiences, some pathetic, some humorous, some tragic or terrible; but for one lacking in the gift of romantic description, it is impossible to get them on paper in such a way that others would be entertained by them.

If the work has been hard I feel more than repaid by the friendships I have formed both in and out of the Service and by the satisfaction of having given my best to the job and I expect to continue to be an ex-officio member of the force for many years to come. - From R-5 Bulletin

FOREST FALSE FRONTS

By W. V. Kennedy, Ottawa
(Cont'd. from May 11 issue)

Much can be said concerning the value of our roadside timber for snow fence and beautification; however, we must not overlook the relationship of the timber to the summer maintenance costs. In segregating the cost of summer maintenance for timbered areas from the cost of summer maintenance for windswept areas on our gravel roads, we find an additional amount which we can charge out against the cost of the timbered rights-of-way.

In Gogebic County, where a goodly portion of timbered rights-of-way and semi-protected areas are found, the experience of the county road commission has been that there is a marked difference in the facilities of maintenance between the roads in the timbered areas and those in the windswept areas under the same traffic conditions. This difference is becoming more pronounced each year.

The following is a comparison of dragging costs on windswept areas as compared to the sheltered areas:

Dragging on sheltered areas costs from $154 to $183 per mile, giving an average of $168 per mile as compared to $255 to $337 or an average of $281 per mile for the windswept areas. This makes a saving of $113 per mile which is directly chargeable to the sheltered area.

The following is a comparison of calcium chloride costs on windswept areas as compared to sheltered areas:

A saving of three tons per mile on sheltered areas compared with windswept areas, or a saving of $75 a mile in chloride costs. These figures were reached by an extensive survey conducted over the roads of Gogebic County.

Summarizing all the above data, we have the following comparison:

	Windswept	Sheltered	Savings on Maintenance
Snow plowing	$181.00	$ 78.00	$103.00
Snow fence	32.50	----	32.50
Dragging	281.00	168.00	113.00
Calcium chloride	200.00	125.00	75.00
	$694.50	$371.00	$323.50
Cost of timbered rights-of-way @ $3,000 per mile, @ 3% interest -			90.00
		which allows --	$233.50 per mile

to be charged out on the principal.

The question is asked, "Is it a self-liquidating proposition to buy timbered rights-of-way?"

The answer is "yes."

These figures do not include the intangible esthetic values of roadside timber nor the values which could be charged to the elimination of such problems as road "washouts" and the obstruction of culverts and ditches caused by the heavy run-off of the precipitation on denuded areas as well as the decrease in fire hazard by having green roadsides.

In concluding this article and in view of the above statistics, I would like to make the following suggestions:

(1) That the acquisition of roadside timber be raised to first priority in our land purchase program and be kept in such a position until all roadside timber is purchased on our main travelled roads.

(2) That all denuded land on all of our roads be planted and improved, even down to our lowest grade truck trail.

(3) That extensive public relations work on roadside beautification be initiated in the hope that some public spirited loggers will donate this roadside timber to the public or at least refrain from logging these areas.

(4) To cooperate to the fullest extent with the state and county road officials in establishing funds to place the roadside timber in public ownership.

Our roadside timber must be preserved and some drastic change in our acquisition program must be made immediately to acquire these areas. Each day that passes means that probably another forty of roadside timber has slipped through our fingers, and we must not forget that it has taken approximately 150 years for this timber to reach the awe inspiring size, which so affects our visitors. Let us place it in public ownership as soon as possible. It makes little difference who possesses the deed to the property -- the state, county, or the United States Government, as long as it is in public ownership where it can be protected from the slaughter of the loggers.

As food for thought we will leave the following statistics in the reduction of ECW camps:

Drainage Camps	0 percent
Park Service	9 percent
Forest Service	40 percent

Could there possibly be any relationship between the percentages in reduction of camps and the priority of activities or the principal types of jobs pursued by the different agencies?

The public judges our forest from the road. It is seen from the road. Roadside improvement and beautification is not a "hidden project" as is most of our T.S.I. and planting. It is viewed and inspected daily by our employers, the public. We do not wish to belittle the huge planting and T.S.I. programs because we realize their vast importance, but we wonder if we had stressed direct public activities as fish and game, roadside beautification, and recreation a little more the last few years and eased up on the T.S.I. and planting programs which are usually hidden from the public eye, whether we would have received such a large percentage of reduction in our camps compared with the other agencies?

ANOTHER COYOTE BITES THE DUST

By Emma H. Morton, R. 6

It's better than an even bet that when CCC enrollee E. Nahorniak was a little boy he went to Sunday school and learned the story of how young David achieved fame by throwing a nifty little stone which cut short the blatant career of Public Enemy No. 1 - Goliath to you!

No doubt, it had been some time since young Nahorniak, now a member of CCC Co. 6111, near Silverton, Oregon, had devoted much time to thoughts of David's daring. But the recollection came back with a bang a short time ago when, with a companion Tree Trooper, he encountered a big, snarling coyote near the Silver Creek Falls, a short distance from camp.

Without a moment's hesitation, Nahorniak chose a likely looking stone and threw it with such force and deadly aim that the coyote was struck and killed instantly.

Maybe, too, besides David's inspirational influence, the CCC Camp educational program should be credited with training the boys to use their hands as well as their heads.

YE EDITOR DISCOVERS

For a number of years the National Fire Protection Association has sponsored a Forest Committee. This is in accordance with the general policy of the association to reach out into any new field in which it seems that worth-while public service could be rendered through reduction of the appalling national fire waste. Last year George Gowen of the Washington Office prepared a publication on "Fire Protection and Prevention for Summer Homes in Forested Areas", which was accepted and issued by the National Fire Protection Association. At the annual meeting of the Association this month, Roy Headley, Chairman of the Forest Committee, was unable to report any tangible accomplishment by the committee during the year, but he outlined the amazing story of the development of forest fire control in the United States from a standing start some 30 years ago to its present high development, technically and otherwise. It is also expected that during the coming year the committee of 25 members of the association will find one or more specific projects which will utilize the ability of the membership for the public service and enable the National Fire Protection Association to put its powerful shoulder behind the wheel of national forest fire control.

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Extension of State and Private Forestry as one of the ways by which the Forest Service should help solve the flood control problem was omitted in the April 27 issue of the Service Bulletin under "Ye Editor Discovers". This should have been included along with extension of the National Forest system, the development of the National Forests, and research.

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The Uniform Committee is now negotiating with two textile manufacturing concerns to provide an additional - a more closely woven - fabric for our regular field clothes. The new fabric will be of exactly the same color but will be more closely woven than the 12 to 16 ounce fabrics now in use.

No change in the tropical worsted - 9 oz. - material is contemplated.

After a sample of the new fabric has been received it will be tested by the Bureau of Standards and if it meets with their approval, a complete suit will be manufactured, and reviewed by the Committee, before final decision as to its acceptability is reached.

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Representative Parsons of Illinois, on April 29, introduced a bill (H.R. 12517) to establish a definite and permanent system and policy of flood control; to provide for the acquisition of lands needed in aid of prevention and controlling of floods at the source; to provide for conducting on acquired lands such reforestation and other protection and improvement work as may be required; to provide for the determination of the form and conditions in which forests will render the most effective watershed services; and to provide for cooperative protection improvements and facilities. The bill would authorize the appropriation of $250,000,000 for the above purposes.

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Parts of two established National Forests and of one forest purchase unit and a portion of a second unit have been united by Presidential Proclamation to form the new Jefferson National Forest in southwestern Virginia.

The Mountain Lake Purchase Unit lying generally southwest of Natural Bridge, Virginia, comprises the greater part of the new National Forest. The units to be combined with it include the southern portion of the old Natural Bridge National Forest, that part of the Unaka National Forest lying in Virginia, and the Clinch Purchase Unit in the southwestern section of the State.

Thirty suggested names for the new Forest were considered and the name of Jefferson, Patrick Henry's successor as Governor of the new State of Virginia, author of the Declaration of Independence and third President of the United States, was recommended.

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Nearly one million rural boys and girls are now enrolled in 4-H clubs as shown by the tentative figures recently compiled for 1935 by the Extension Service. The agents reported an enrollment of 997,457 club members in the United States, Hawaii, Puerto Rico, and Alaska, according to the tentative figures. This is 81,395 more members than in 1934 or about a 9 percent increase.

AUSTIN CARY NOTES GIVEN TO FLORIDA UNIVERSITY FORESTRY DEPARTMENT

Technical forestry notes of the late Dr. Austin Cary have just been presented to the department of forestry in the University of Florida, and will be available for consultation by Southern lumber and timber operators, as well as for use by students, it is announced by Prof. Harold S. Newins, head of the department. The gift, made by a brother, G. F. Cary of Mount Dora, included also personal forestry equipment of considerable value.

For 45 years Dr. Austin Cary had been prominent in forestry work of the United States, particularly in the South. He was a resident of Lake City, Florida, for the past ten years, and was greatly interested in the department of forestry which was established in the College of Agriculture during 1935. He was on his way to consult with Prof. Newins on the morning of April 28, when he dropped dead in the Experiment Station building.

Six large boxes of notes and equipment were in the recent gift to the department. Equipment and tools included calipers, instrument board, increment borer, diameter tapes, and a clinometer for measuring the height of trees. No equipment of this kind had been available for students to use heretofore.

Many of the technical notes were made in Florida, Alabama and Georgia. They concerned fire studies, thinning, drought and bugs, turpentining and gum yield tests. Dr. Cary was very methodical and his notes were complete through the day preceding his death.

As the Austin Cary Memorial Forestry Notes, they have been filed in the Library of the University of Florida. They are of particular value to naval stores operators and to timber men interested in the newsprint industry now growing in the South. - Agricultural News Service, University of Florida.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

U. S. F. S. RECEIVED LIBRARY

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 12 Washington, D. C. June 8, 1936

ONE YEAR OF RESETTLEMENT

The following excerpts from a statement by Resettlement Administrator and Under Secretary of Agriculture Tugwell on the first anniversary of the Resettlement Administration may help to clarify understanding of the ideals and program of the Resettlement Administration. That agency has been subject to an unusual amount of newspaper criticism, which often has painted the picture in the most damaging way. Therefore this statement of Dr. Tugwell's is reproduced to aid Forest Service people in making a fair judgment of his program.

"It was a year ago this morning (April 30, 1936) that President Roosevelt signed the executive order which established the Resettlement Administration. The idea behind it was that many of our farm people were struggling under difficulties not of their own making which a wise and careful government ought to try to remove. We were given two jobs to do. The first was to care for some five hundred and twenty-five thousand farmers and their families who were in need of immediate help. The second was to do something about the poor and worn-out land which has made decent farming impossible and has pulled down the living levels of so many farmers.

"We undertook first to do a rescue job. About two hundred thousand farmers did not even have enough to eat. To these we made grants for food and clothing to help them through a hard winter until we had the resources to do something more fundamental. These two hundred thousand are now facing the spring with new hope. The winter is behind them.

"Then there were about three hundred thousand farmers who had been hit by the unusual weather conditions of the past few years -- drought, dust storms, flood -- or whose credit had been used up during the long years of depression. These people needed just a little help to put them back on their feet, to enable them to make their own living and remain independent of relief. To them we held out a helping hand in the form of a small loan. We went about it in this way. We asked several citizens in each community to act as a committee -- a farmer, one of our own clients, a clergyman, perhaps the village druggist, or a merchant. When a farmer came to us for help we asked this committee of people who had known him all his life whether they judged that farmer could make his own way if we made him a loan. If they did -- and about eight times out of ten they did -- we asked our county supervisor to work out with the committee what we call a farm and home plan; and then we made the loan, provided the farmer promised to follow these plans for good management. ***

"We have loaned this year nearly one hundred million dollars to some three hundred thousand farm families in this way, and our judgment now is that at least three quarters of it will be repaid. And our reason for thinking so is that already eleven million dollars has come back to the government from these and similar loans made last year by another agency.

"Incidentally we have been carrying on a program of debt adjustment for farmers all over the country who have come out of the depression with overwhelming debts contracted when prices were high. This service has cost the government very little. It is carried on by interested people all over the country who volunteer to act without pay as arbiter between debtors and creditors. *** Seventeen thousand farmers have taken advantage of this service and have secured a reduction of sixteen million dollars in their debts.

"The more fundamental job of rescuing our farm people from the hopeless disadvantage of working poor land -- we went about more slowly because we wanted to be sure and because we worked hardest and spent a good part of our funds on rehabilitation loans. But we have made definite progress.

"The problem was not a new one; it had been growing more and more critical for many years. And it will take many years to solve it. The way to do it is clear enough -- and has been for a long time -- not only to experts but to practical people all over the country. Thousands of people had written to us suggesting something of the sort. It was merely a question of setting up an organization to do it. ***

"So we made a start, while carrying on our urgent rescue work, in the retirement from farming of those poor lands upon which people are starving, land which is good for trees, for grass, for parks or wildlife, but not for arable agriculture.

"We have accepted options on ten million acres and have finished the buying of two million. On these areas we are carrying on a reconstruction program. We are taking these lands on which people cannot make a living and making of them parks and playgrounds for city and country people alike. We have planted trees and grass, we have stocked them with game, and made refuges for the nation's fast disappearing wildlife. We have created new forests, protected streams and set up camps by the wayside.

"For the people on them we have provided new opportunities elsewhere. We have bought them out and enabled them to move to better land; or we have made them a loan; or we have placed them on a new farm from which some other farmer was ready to retire.

"These are the things we have done during our first year. We have lent a helping hand, by loans or grants to some six hundred thousand farmers and their families. We have bought two million acres of poor land and optioned eight million more. These, at least, will not go on creating poverty for our people. We have learned to think of land and the people on it together. Good land and good people -- we think of these as inseparable. We have planned and are building twenty thousand new home and work places for the people who were on the land we have purchased. This is the merest fraction of the numbers who would like to be relocated but it is all we could do with our time and money.

"Our organization was really an attempt by the President to rationalize one function of the government of which he is the head. It brought together efforts formerly made by separate agencies to do something about our land and the people on it. Efforts had been begun by the relief organization, by the Subsistence Homesteads Division of the Department of the Interior and by the Department of Agriculture. We have tried to put these activities together in a logical and economical way, to finish up the tasks begun by them and to give studied direction to all these efforts. It has been a huge job and a difficult one but we can honestly say on this, our first birthday, that we have made good progress."

HIGHLIGHTS OF THE RANGE REPORT

1. The range area of 728 million acres is nearly 40 percent of the total land area of the continental United States; more than 99 percent is available for livestock grazing.

2. About half the range area, or 376 million acres, is in private ownership. One-third, or 239 million acres, is Federal range, divided among National Forests, grazing districts, public domain, and other withdrawals and reservations.

3. Forage depletion for the entire range area averages more than half; the result of a few decades of livestock grazing.

4. Range depletion on the public domain and grazing districts averages 67 percent, on private, Indian, and State and county lands about half, and on National Forests 30 percent.

5. Three-fourths of the entire range area has declined during the last 30 years, and only 16 percent has improved, (mostly that in National Forests.)

6. During the same period 95 percent of the public domain and grazing districts has gone downgrade and only 2 percent has improved. For other forms of ownership and control corresponding figures are: private lands 85 and 10, State and county lands 88 and 7, Indian lands 75 and 10, National Forests 5 and 77.

7. Only about 95 million acres of the entire range area is in reasonably satisfactory condition. Nearly half of the National Forest range and 12 percent of private ownership falls in this category. The reasonably satisfactory areas in other ownerships are inconsequential. Probably not much over 5 percent of the entire range area is in a thoroughly satisfactory condition.

8. An outstanding cause of range depletion has been excessive stocking. Some 17.3 million animal units are now grazed on ranges which it is estimated can carry only 10.8 million. The removal of the surplus is the most effective way to stop depletion and start the range on the upgrade.

9. About seven-tenths, or 523 million acres, of the range area is still subject to practically unrestricted grazing.

10. Precipitation in the range country averages less than one-third that of the Middle West and East. One to four drought years out of ten characterize practically all of the range area. The failure to recognize in stocking the wide and direct fluctuation of forage production with precipitation has been one primary cause of depletion.

11. Among financial handicaps to the range livestock producer, possibly the most serious, is the marketing differential, mainly freight, which for Idaho is nearly $8.50 for an 1100-pound steer in the Chicago market as compared with Illinois.

12. The one best answer to this and other financial handicaps is cheap range feed, which costs only one-fifth to one-tenth as much as hay or other supplemental feed. But serious depletion of range feed has been practically universal and heavy supplemental feeding has been necessary.

13. Unsuitable land laws and policies have made the range a bewildering mosaic of different kinds of ownerships and of uneconomic units which together constitute a serious obstacle to range management and profitable livestock production.

14. Range livestock production was once almost wholly pastoral. Thirty-five percent of the feed for western livestock is now supplemental feeds raised on crop lands or irrigated pastures; a threefold increase in 45 years. Except for highly specialized crop farming, mostly on irrigated land, western agriculture is now primarily an integration of range livestock grazing and crop farming.

15. Excluding irrigation improvements, the 1930 Census values farm lands and buildings, privately owned range lands, and farm and range livestock, etc., at nearly 12.9 billion dollars.

16. Most spectacular among the maladjustments of range land use has been the attempt to use more than 50 million acres for dry-land farming. About half, ruined for forage production for years to come, has already been abandoned for cultivation, much of it even before going to patent.

17. A more serious but much less spectacular maladjustment has been the private acquisition of many million acres, either submarginal for private ownership as shown by high tax delinquency and relief rolls, abandonment, etc., or having high public values for watershed protection which private owners cannot maintain, or both.

18. Four-fifths of the 232 million acres which yield 85 percent of the water of the major western streams is range land, and low precipitation makes water the limiting factor in nearly all western development.

19. No less than 589 million acres of range land is eroding more or less seriously, reducing soil productivity and impairing watershed services. Three-fifths of this area is adding to the siltload of major western streams.

20. It will probably require more than 50 years of management to restore the depleted range sufficiently to carry even the 17.3 million livestock units now grazed, and probably an additional 50 years to restore it to the nearest possible approach to its original grazing capacity of 22.5 million units.

21. Action of greatest immediate urgency and importance is to:

Stop soil and forage depletion, and start both on the upgrade;
Reduce excessive stocking, place all range lands under management, and restore cheap range feed;
Rectify land ownership and use maladjustments, and obtain a sound distribution of ownership between private and public agencies;
Build up economic private and public units;
Balance and integrate crop and range use;
Correlate the livestock, watershed, forest, wildlife, and recreation forms of range land uses and services;
Obtain a recognition of the responsibility of stewardship by private owners;
Minimize or remove various financial handicaps of stock producers;
Reconcile range conservation and the financial needs of State institutions;
Solve the tax delinquency problem;
Place public lands under the supervision of agricultural agencies, as a step towards unification of public responsibility for the entire range problem. Provide on such lands for a sound distribution of grazing privileges, and prevent the establishment of prescriptive rights;
Obtain and apply the information necessary for the conservation and wise use of the range resource;
Prevent human wastage and insure social and economic security.

A "DOWN-UNDER" POISONOUS-PLANT TWOSOME

By Daytonius, Washington

The following are matters of common knowledge: (1) Hydrocyanic (prussic) acid is widely distributed in the vegetable kingdom, and is perhaps particularly familiar in species of the genus *Prunus*, in many legumes, and in certain grasses of the sorghum alliance. (2) This virulently toxic liquid occurs in plants in a "locked-up" condition and needs an enzyme or ferment of some kind as a "key" to unlock it -- otherwise the plant, from the HCN standpoint at least, is harmless. (3) In the digestion of proteins these complex nitrogenous compounds are broken down in the alimentary tract by various enzymes, such as pepsin in the stomach and trypsin and erepsin in the small intestine, into simpler, soluble substances, principally amino acids.

With the above facts as a background, it is of interest to read, in a recent publication of the Council for Scientific and Industrial Research of the Commonwealth of Australia (Pamphlet No. 49, "Some important poison plants of North Australia"), of a curious case of cattle and sheep poisoning in the Georgina River valley of extreme western Queensland, resultant from dual use of two shrubs or small trees: "Georgina gidgee" (Acacia georginae), one of those queer Australian acacias with the leaves apparently undivided, being reduced to modified petioles (phyllodia), and "spotted berrigan" (Stenochilus maculatus), falsely called "fuchsia," a handsome plant, with pentstemonlike flowers, belonging to the myoporum, or false-sandalwood family (Myoporaceae). This acacia can apparently be browsed alone with impunity, and the older growth of the "berrigan" is occasionally cut and used as an emergency stock feed without harmful result. At first, the nitrogenous pods of the acacia were (erroneously) thought to be poisonous, but it has now been ascertained that they contain the enzyme which liberates prussic acid from a glucoside in the "berrigan." The two species, therefore, may be a fatal combination. Kipling's thought that sins are committed by twos may also have a botanical significance!

This Australian situation raises the question as to whether cases of this sort may not also possibly occur in our own country. Can it be that, among the obscure and unexplained cases of stock-poisoning on western ranges, a toxic twosome may occasionally be the culprit?

FIRE CONTROL NOTES

By Roy Headley, Washington

The fire meeting at Spokane in February gave the Washington Division of Fire Control a mandate to publish currently something which will serve as a medium for exchange of information and ideas between all the groups and individuals who are doing creative work in fire control.

When fire executives, researchers, and staff men come together as at Spokane, all are impressed by the revelations of what the other fellows are thinking and doing. But too often the creative work of one group is totally unknown to other groups. One man who has felt the need for a certain type of equipment finds that someone has developed just that tool. Another who has been using defective techniques in detection planning finds that better techniques have been developed and applied by some group with which he has not been in touch. Theories, policies, experiments, executive practices are revealed which would have been utilized widely - if they had been made known to all.

Even if the Service Bulletin could carry fire material as specialized as is desired, the Bulletin does not reach all the groups who should contribute to and receive "Fire Control Notes". State and private fire organizations, National Park and Indian Services, forest schools and Canadian organizations should be included as well as Forest Service units.

It was intended to put out the first issue of "Fire Control Notes" in May. Contributions have not come in, but many of the papers delivered at Spokane deserve wider attention than they can receive when presented only in the limited issue of the Minutes of the Spokane Meeting.

The final decision was, however, that the first number of "Fire Control Notes" should be put out in the Fall of 1936. During the summer season everyone will be so busy that there will be no time to read even the things that must be read to keep up with changes in procedure in unemployment relief activities.

Will "Fire Control Notes" when issued, meet the need for a clearing house of ideas and information? Will it really provide the common fund of current thought and experience which will give a sense of solidarity to all workers in fire control?

The answer depends on whether you individually appreciate what such a publication might mean, feel a sense of responsibility for it, and do your part. Whether you are a teacher, trainer, researcher, inspector, staff specialist, Forest Supervisor, or District

Ranger, you will, during the season, see something, do something, or think something worth adding to the common fund of understanding. Perhaps you can in 50 words make a worth-while point or give the essence of an experience which will entitle you to benefit from the contributions of others.

Criticism is always in point. If you have a pet peeve on some fire control subject, give the rest of us the benefit of your point of view.

Perhaps you have an idea for a new piece of equipment or have improved some tool already in use. Tell us about it.

Perhaps you are following some long, laborious trail of fire research. Tell us where you have gotten to, difficulties encountered and what you plan for future work.

Perhaps you have an idea on fire reports, fire statistics or the values which may be obtained from statistical analysis. National Forest fire reports and statistics are scheduled for a complete overhaul job, and you can help.

Perhaps you have had a suggestive experience in fire prevention, or want to raise a question on that subject. Nothing needs new ideas worse than fire prevention. Lend a hand.

Perhaps you have tried something new in organization or methods on the fire line or in training of guards or in fire improvements. Let the rest of us know about it.

When drawings, charts, or graphs are necessary for effective presentation of a subject we will undertake to print them.

Do not think that we will have all the material we need without your contribution. There is no limit to the size of No. 1 - Vol. 1 of "Fire Control Notes" except the amount of meaty, readable material we receive.

Address your contribution to: Chief, Forest Service, Division of Fire Control, Washigton, D. C.

YE EDITOR DISCOVERS

The Appropriation Act for the Fiscal Year 1937 was approved on June 4. The amounts carried in the Act are given below. (For comparative purposes 1936 appropriations are also shown.)

	Appro. 1936	House Total	Appro. 1937
General Administrative Expenses	*$ 365,800	$ 532,163	$ 565,232
Fighting Forest Fires	100,000	100,000	100,000
Prot. & Adm., National Forests	8,009,577	9,925,561	10,815,950
Forest Mgt., Research	504,494	620,994	620,994
Range Investigations	154,435	181,935	181,935
Forest Products	508,361	499,022	608,361
Forest Survey	250,000	150,000	200,000
Forest Economics	----	81,295	91,295
Forest Influences			
Research	99,152	99,152	99,152
Shelterbelt	-----	-----	170,000
Forest Fire Cooperation	1,578,632	1,578,632	1,655,007
Acquisition	-----	-----	2,500,000
Forest Roads and Trails	7,082,600	7,082,600	8,000,000
Passenger-Carrying Vehicle Authorization			
Regular	41,885	33,005	50,000
Roads	7,425	15,068	15,068

(* Includes $7,500 for National Forest Reservation Commission.)

The Act carries the following proviso relating to the work of the shelterbelt in the Fiscal Year 1937: "Provided that $170,000 shall be available only for maintenance in nurseries of existing stocks and for free distribution thereof to farmers".

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Although the 12 million dollars allotted for land acquisition by the President on August 1, 1935, shows a record overburden of $71,802, it appears inevitable that a number of the approved cases will fail of consummation. To avoid any loss of funds, the National Forest Reservation Commission at its meeting on May 26 was asked to approve an additional purchase program of 27,860 acres at a cost of $143,543, and did so, thus minimizing the possibility that the allotted funds will not effectively be expended. Of the approved program, 6,211 acres is in the Appalachian region, 8,732 acres in the Southern Pine region, 5,413 acres in the Ozark and Central Mississippi region, 7,442 acres in the Lake and Upper Mississippi States, and 62 acres in California, the latter comprising two important key areas in the Kings River Canyon.

Under the allotment of ERA funds by Executive Order dated June 19, 1935, the various Regions have submitted for approval by the Washington Office and, in large part, have acquired a total of 149,353 acres of lands at a total cost of $470,317.15, exclusive of areas acquired for administrative sites. These lands are in all substantial respects comparable to those purchased under the Weeks Law. To obviate the need for their separate classification in all future reports, to facilitate legal action where condemnation was necessary, and to definitely fix their permanent future National Forest status, their approval by the National Forest Reservation Commission was advisable. The complete ERA program was therefore submitted to and approved by the Commission.

The 2½ million dollars allotted for Aquisition in the Appropriation Act for the Fiscal Year 1937 represents only about one half of the sum required to consummate cases now covered by option at acceptable prices. Meanwhile, there have arisen some special cases which may demand priority; hence the probable appropriation will fall far short of that necessary for continuance of the work on the hitherto prevailing scale.

Some members of both Houses of Congress have expressed a strong hope that the pending deficiency bill as finally enacted would make or authorize financial provision for additional land classification. Unless that hope becomes a reality, need will exist for a rather drastic curtailment of current classification activities.

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The three forest community projects approved by the Rural Resettlement Administrator, i.e. the Basswood in Michigan, the Drummond in Wisconsin, and the Sublimity in Kentucky, are now entering the actionable stage. Last week the Resettlement Administrator allotted sufficient funds to carry on these projects until July 1 with the guarantee that the remaining money would be available as needed after that date. The Director of the Procurement

Division has executed a waiver authorizing the Forest Service to purchase directly all material, supplies, and equipment necessary for the three projects. Certain final adjustments of titles remain to be worked out but they will be cleaned up shortly.

Reviews by the Divisions of the Resettlement Administration of the plans submitted by the Forest Service have resulted in some questions as to certain details of layout, architecture, food production, etc. In approving the three projects, the Administrator directs the attention of the Forest Service to these comments but does not require their acceptance. Such of the comments as are found to be valid will, of course, receive constructive consideration.

On April 1, supervision of the forest community work was taken over by Payson Irwin, who was transferred from the NRA, in which organization he previously had held the position of a Deputy Administrator. Prior to entering the Government Service, Mr. Irwin had supervised a number of important suburban subdivisional projects, and so he brings to his present duties a wide field of knowledge on the financial, the planning, and the construction phases of community development.

There are now pending consideration in Resettlement four additional projects, of which one is in Minnesota, one in Michigan, one in Ohio, and one in Illinois. If these are actively initiated there will be seven definite examples of an established relationship between certain National Forest areas and certain communities planned to facilitate the intensive utilization of the products of such areas.

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The Stuart Nursery on the Kisatchie National Forest, Louisiana, will be formally dedicated, on June 17, in memory of the late Chief Forester Robert Y. Stuart. Associate Chief E. A. Sherman will represent Mr. Silcox at the dedication and deliver the principal address.

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Mr. Edward C. M. Richards, Forester of the Tennessee Valley Authority, has asked the Forest Service to make a thorough review of all the forestry activities of his department. He believes this will result in even closer and more efficient coordination than now exists between the forestry activities of the TVA and those of the Forest Service.

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The Forester has appointed Earle Peirce, formerly of Region 9 and of late Acting Division Chief of Acquisition in the Washington Office, as Chief of the Division of State Cooperation. He will serve under E. W. Tinker, who is in charge of the State and Private Forestry Divisions.

LAUNDERING UNIFORM STOCKINGS

"Use a good grade of soap or soap chips, lukewarm water, and do not rub the fabric any more than absolutely necessary, to remove the soil. Rinse thoroughly in clean lukewarm water, and for drying, either lay out flat, stretching the foot to the original size or use a shaped wooden form inside the hose. The latter insures more satisfactory results, but the forms are not always available, but if the hose are laid out flat and allowed to dry after having been stretched to the original size, we are quite sure your men will find this method satisfactory.

"Above all, caution the men not to use water that is too hot and not to rub the hose excessively, as this causes fulling and results in shrinkage of the fabric." - Hand Knit Hosiery Company.

FOREST SERVICE U S DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 13 Washington, D. C. June 22, 1936

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THE SAN JOAQUIN EXPERIMENTAL RANGE

By C. E. Rachford, Washington

A typical piece of Sierra foothill land. How well do I recall it! Memory takes me back to the happy days in Region 5 when we traveled through this country to reach Northfork. The complete desolation which encountered one's vision in all directions during the dry season or in a drouth year can never be effaced from the mind. Barren ground, poor hungry cattle weaving up and down the barbed wire fence (in none too good a state of repair) as if at times they must rest against either the post or wire for support. This scene was accentuated by dilapidated buildings, poor roads, and inadequate watering facilities for livestock.

As we traversed this and similar country in years past, many of us felt that such use of land must be socially and economically unsound. We visualized the need of study and the development of such plans as would change the scene to one whose very appearance would suggest a greater contribution to the welfare of the community. Just what formula was needed to bring this about, few would venture to predict, but the belief was general that overstocking and mismanagement were fast putting an important industry out of business.

After the passing of many years, it was my good fortune unexpectedly to be invited to the opening day or dedication of the San Joaquin Experimental Range, on May 2, 1936. On this area of 3,600 acres, the scene had begun to change. Of course, this was partially due to a very favorable season, when only the foothill country can look so beautiful as it did at that time. But with all due allowance for the good season, the trip into this area made one instantly aware of further changes. There is a fairly good road into the area, and modern improvements have replaced the old dilapidated buildings and other facilities. We saw fat, good-grade cows, contented in an abundance of what appeared from casual observation to be good feed, but which the range expert describes as far below its potential productivity.

But the greatest surprise was not the modernity of the improvements, the extent of water development, the cattle, or the range -- it was the preparation for an assemblage the like of which was a new experience. Here were assembled members of the Regional Office, the Experiment Station, the University of California, the College of Agriculture, the Extension Service, the Biological Survey, the two State livestock associations, and 250 representative citizens attending from San Francisco south to Bakersfield.

The purpose of this assemblage, as indicated above, was officially to dedicate the San Joaquin Experimental Range. It is an area representative of some ten million acres or more, which is of vital importance to the livestock industry as a source of fall, winter, and spring feed. The reasons for the conditions existing on this range have more recently been determined, as surmised by many of us in the early days, to be due to the fact that annuals now account for approximately 97 percent of the herbaceous forage. The bunch grasses and other perennials are on the way out.

The enormous amount of work which has been done at this station in a comparatively short time in the way of improvements, water development, experimental pastures, nurseries, etc., is an encouraging indicator that the Forest Service is on the right road to a solution of the difficult and complex problems involved. Director Kotok and Region 5 are certainly to be commended for the vision which has enabled them to attack these problems. While the Station was established "as a field laboratory in which to study in cooperation with the University of California these puzzling problems of foothill range management and interlocked land uses," such as to observe the effect on the range and on the animals of light, moderate, and heavy grazing at different times of the year and to develop improved methods of evaluating range conditions and changes, it does in my judgment, go much further. It encompasses the whole field of land and livestock management and its relation to social well-being. It brings into the picture the work of ten different cooperative agencies. It not only initiates research, but applies the results of research in a practical way. This was clearly evident throughout the excellent program, which was opened by Harvey Russell, chairman of the stockmen's advisory committee of Madera County; by the greetings of E. I. Kotok, and the speech of Dr. S. B. Freeborn, acting for the Dean of the College of Agriculture, University of California.

M. W. Talbot, in charge of range research in California, gave an excellent account of his range management studies at the experimental range. Dr. A. W. Sampson, professor of forestry, University of California, also gave an interesting paper on chemical studies of foothill forage plants. Regional Forester Show viewed the experimental range in its broadest terms as it related to the foothill regions and the National Forests.

After lunch, which was served picnic fashion with hot coffee provided by the Station, trucks provided transportation to observe the forage plant nursery, rainfall runoff plots, rodent enclosures, and interesting discussions at the livestock corrals by Gilbert and Rochford on handling, feeding, and management of the experimental herd of cattle and cattle grazing.

Dr. G. E. Hart, head of the Division of Animal Husbandry, University of California, is directing the animal husbandry studies at the experimental range, and, like all the others, is as enthusiastic over the work at the Station as if it were his own exclusive responsibility. The harmony with which cooperation is indicated at this particular station proves to my mind that cooperation on a gigantic scale is possible.

The pleasure and comfort of guests was largely due to the untiring energy and hospitality of Senor Nelson, Superintendent of the Experimental Range, and his charming Senora.

HIGHLIGHTS OF CCC FORESTRY PROGRAM IN REGION ONE

The mountainous country of northern Idaho and western Montana embraces the largest and last sizable body of virgin white pine timber in the world. According to present estimates there are slightly more than fourteen billion board feet within this area, of which 88 percent is in northern Idaho and 12 percent is in western Montana. The mature pine represents a stumpage value of 85 million dollars. Converted into lumber it would have a mill run value of 425 million dollars. In addition, young growth has a potential value of hundreds of millions of dollars. A resource that is truly worth giving every possible protection. And, this is but one of the many forest resources which must be given adequate protection and wise management in the land use management plan for the territory as a whole.

All of this white pine, from the smallest seedling to the monarch of the forest, faces three vicious enemies which know no quarter. First is that red enemy -- forest fires. Second is that cancerous, strangling enemy -- blister rust. Third is the destructive insect pest -- mountain pine beetle. These enemies annually claim a terrific toll. They can, and must be conquered. How? And what part has the CCC taken in the past and what part can they take in the future in these three continuous major battles?

First, consider forest fires. There are three facilities which must first be provided before we can attain adequate control of fires. These are detection, communication, and transportation. Protection of this vast area from fire requires a comprehensive and carefully planned system of lookout towers, thousands of miles of telephone lines, foot and horse trails and truck trails. Much of this had already been provided through regular appropriations before the advent of the CCC. Much more remained to be done.

Up to September 30, 1935, in the accessible parts of the territory, the Forest, State and Private camps in this Region had constructed 221 lookout houses and towers, 1273 miles of telephone lines, 473 miles of horse and foot trails, 2185 miles of truck trails and 7 emergency airplane landing fields. An appreciable contribution which has hastened the completion of the improvement program by nearly a decade. Unfortunately, however, most of this work has necessarily been confined to the more accessible portions of the various National Forests, since CCC camps cannot be located in remote territory beyond truck trail transportation, or in localities snow-bound until late spring.

In the suppression of fires, the CCC, up to September 30, 1935, has contributed 218,099 man-days from the National Forest camps and an additional 37,342 man-days from the State and Private camps, a total of more than a quarter million. A truly impressive amount of time that has greatly reduced the amount of money which otherwise would have been expended from the fire fund. The immediate readiness and prepared-for mobility of small detachments of the CCC camps permitted speedy attack in most cases before the fires had reached a size difficult to control. The advance training of selected enrollees and their assignment to fire fighting units of various sizes from two men to fifty men greatly facilitated quick movement of units whenever the need arose and resulted in more efficient performance and fewer accidents on the fire lines.

Annually the Region is subjected to a fierce bombardment of lightning. Much of the timbered area is devoid of population. Roads have not yet penetrated many large areas where the need for truck transportation is most urgent at such times. Unfortunately, lightning does not always choose to strike in the areas where the CCC or other population is available. Serious and damaging fires occur in the "back" country beyond the limits of CCC availability and must be handled with other classes of labor.

As to the second enemy -- blister rust: Its damage to white pine of all age classes is almost beyond comprehension. Funds and much man-power were and still are needed to assure success in the battle against this disease.

The CCC camp came as a most welcome supplement to the crews already engaged in this work in sections accessible by and from roads. During the past three summer periods they eliminated the ribes from 530,797 acres in the heart of the white pine section, working from the Forest, State and Private camps. They cannot cover much of the white pine zone because of the absence of roads.

The third enemy, mountain pine beetle, less widely known, is nonetheless avaricious. This insect pest spreads rapidly, levying an ever-growing tribute among the white pine timber resources. Its control presents even greater difficulties than does blister rust, in that trees themselves are the hosts and infected trees must be removed.

The CCC has been tossed into the breach here too, in an effort to stem the advance of white pine enemies. An infinitely greater amount of effort is needed. Forest camps of the CCC have treated 6,752 acres against pine beetle. Nearly all of this work was accomplished during the fifth enrollment period. Here too, the lack of roads hampers fullest use of the CCC.

SURVEYS AND MAPS CONFERENCE

By J. W. Ninneman, R. 7

The Surveys and Maps Conference opened at Missoula, Montana, at 9 a.m. May 6, in the library of the University of Montana. The following were present: Mr. Lautz of the Washington Office, Messrs. Cool, Kelley, Lyman, Swan, Thieme, Yule and Waldo of Region 1, Mr. King of Region 2, Messrs. Landon and Severs of Region 3, Messrs. Bird and Truscott of Region 4, Messrs. Littlefield and Sodelmeyer of Region 5, Messrs. Flack and Wernstedt of Region 6, Mr. Ninneman of Region 7, Mr. Pidgeon of Region 8, Mr. Kemp of Region 9, Messrs. James and Wright of the Soil Conservation Service, and Mr. Gruner of the Zeiss Aerotopograph Corporation. Mr. Lautz presided and opened the meeting by introducing all the members.

Surveying and mapping methods were discussed from every angle -- from ground control through aerial photographic methods to filing and reproduction. Discussion at times became rather heated, but Mr. Lautz kept a tight rein and very little time was lost. Several of the secret devices of Region 1 were exhibited or demonstrated, and Mr. Gruner explained the principles and demonstrated the operation of the Multiplex Aero Projector. A variety of maps was exhibited and methods were demonstrated. The outstanding exhibits, excepting, of course, the Multiplex Projector, were perhaps Region 1's Fire Dispatcher's Desk, involving the use of aerial photographs, and the exceptionally fine relief model exhibited by Region 5.

On May 13 the conference approved the reports and recommendations of the various committees, and the following day was devoted to a tour of the Region 1 offices.

TEACHING FELLOWSHIPS

The College of Agriculture of the University of Florida announces two Teaching Fellowships, at one thousand dollars each, or one hundred dollars per month for ten months, September, 1936--June, 1937 inclusive (candidates must consider, however, completing summer camp of eight weeks in 1937 without additional compensation, after fiscal date July 1, 1937).

One fellowship entitled the "Ecology of the Slash Pine" is in the Department of Botany and the other entitled "Some Phases of the Naval Stores and Cellulose Industries of the South" is in the Department of Agricultural Chemistry. The candidates must have a degree in forestry and credit in at least eighteen hours of their respective field, Botany or Chemistry.

The teaching will consist of approximately ten credit hours in the Department of Forestry in both curricula of (a) Semi-professional course, and (b) Four year degree course. The maximum of three credit hours per semester may be carried in the graduate school toward either the Master's or Doctor's degree according to the teaching load. All applications should be filed immediately, addressing the communication to the Dean, College of Agriculture. The State Board of Control will announce the appointment August 18.

The State Legislature of 1937 will determine the possible expansion of the Department of Forestry of the University of Florida. In the meanwhile these two teaching fellowships are made available.

Florida affords the opportunity for study not only of southern forestry conditions, but also an exceptional sub-tropical flora coupled with Pan-American economic trade factors. The wood-using industries are now on the threshold of a new era in forestry for the South.

YE EDITOR DISCOVERS

Mr. Silcox expects to leave for Europe on July 8. As previously announced, he and Assistant Chief C. E. Rachford have been selected by the Carl Schurz Memorial Foundation to study forestry conditions in Europe this summer. (Style note: the Chief's new 9 oz. tropical worsted "field clothes" and 5 X beaver hat are expected to be worn for the take-off.)

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At a recent conference of the chairmen of the various activities of the General Federation of Women's Clubs held at Miami, Florida, Region 8 provided small gavels made of longleaf pine as souvenirs to the delegates who attended the Conservation Section of the Conference. These gavels, about three inches long with handles about seven inches long, were made in a CCC camp and were nicely turned and varnished. The Forest Service shield was burned in one face of the gavel. So popular were these gavels that requests have been received for an additional number to be given out as a reward of merit to clubs that carry out conservation projects of outstanding character. Mrs. H. G. Bogert, National Conservation Chairman at Akron, Colorado, has asked for about 250 gavels from each of the Regions, turned from one of the characteristic woods of the Region. This would provide about 2500 gavels to be distributed among 14,000 clubs. The Division of Information and Education is writing the Regions to ascertain if it would be possible to meet this request.

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Plans are under way for furnishing Forest Schools with copies of certain types of mimeographed material, as well as regular publications, issued by the Forest Service, in order that the schools may be in closer touch with Forest Service work and policies, and increase the reference material in their libraries. The Forest Schools were recently asked if they would be willing and able to preserve the material and keep it up to date as amendments and corrections are furnished. Replies received to date indicate that the Schools are very desirious of receiving this material.

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Raphael Zon, Director of the Lake States Forest Experiment Station, has been selected as the American representative to the International Union of Forest Research Organizations, which meets in August this year in Hungary. At these international meetings which are held every three or five years, papers reporting the progress of research are presented, new techniques in forest research are discussed, and programs formulated for better international cooperation on problems which are not confined to individual countries. All the Forest Experiment Stations and the Forest Products Laboratory are members of the Union.

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Dr. R. A. Fisher, of the Rothamsted Experiment Station, England, who is noted for his application of statistical methods to agriculture and soils research, is visiting the United States this summer. Arrangements have been made for Dr. Fisher to meet a group of forest Experiment station specialists for a seminar on the design of field experiments.

LEGISLATION

A bill (S. 4723) introduced by Senator Norris of Nebraska and passed by the Senate June 6, and a companion bill (H.R. 12939) introduced by Representative Jones of Texas but not yet (June 11) acted upon would provide for reforestation and afforestation in the various States and Territories on a cooperative basis between the Forest Service and appropriate Federal, State and other agencies, or directly. This includes the production, procurement, and distribution of forest-tree and shrub-planting stock; necessary advice to farmers regarding the establishment, protection and care of farm forests and plantations, the harvesting, utilization, and marketing of the products thereof, and the authority necessary for investigative work in connection therewith; and authority to purchase, lease or accept donations of land and develop nursery sites for the production of planting stock. Cooperation on the part of the Federal Government is limited to 50 percent of the estimated ultimate direct cost, in addition to the land to be leased, which is furnished by the farmer.

This act, to be known as the Farm Forestry Act, carries no appropriation but authorizes annually such amounts as may be necessary.

The possibilities under this bill, if it passes, of developing forest tree planting and correct forest management practices on farms and other rural areas, are considered enormous. This is true particularly in the Prairie-Plains States, although the Act is so drawn as to be applicable to all the States and Territories, and can be applied with equal intensity in any State in which interest is aroused. Much aid to farmers on planting, stand improvement, marketing, etc., will be possible; in fact, it appears that although brief, it is really a new charter for farm forestry efforts by the Forest Service and cooperating agencies.

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Conference action the first of June completed the procedure necessary to send the Omnibus Flood Control Bill on its way to the President. As the bill now stands it provides that flood control work on the land shall be coordinated with similar work on the rivers. It establishes the Army as the agency to undertake such flood control work on rivers and waterways and the Department of Agriculture as responsible for investigations and measures on land. The bill also authorizes invetigations of some 200 streams in the United States for flood control purposes and for 1937 authorizes an expenditure of 50 million dollars, 40 million of which is for construction of dams, levees, spillways, etc. by the Army Engineers and 10 million for surveys and investigations. The latter sum is to be divided equally between the Departments of War and Agriculture. Whether such an appropriation will be possible this year remains to be seen. One deficiency bill which carries the relief item is still in conference. If a second bill comes up, it is expected that those interested in flood control work will want the 50 million dollar item included.

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The Hayden-Cartwright Road Bill.--New road legislation authorizing appropriations for the fiscal years 1938 and 1939 has now been passed by the House and Senate, the differences worked out by the Conferees, and conference report approved by both bodies. There is every expectation that the President will sign the bill. This bill sets up appropriation authorizations for Federal Aid, secondary roads, grade crossings, National Forest roads and trails, National Park roads and trails, National Parkways, road work in the Indian Reservations, and the roads on the public domain. The authorization for forest roads and trails for the fiscal years 1936 and 1937 was ten million dollars. By the new bill the amount is increased to fourteen million dollars. The section relating to forest roads and trails contains two provisos. The first requires that of any appropriation subsequently made for a fiscal year one-third of the amount of the appropriation but not less than three million dollars for any one fiscal year shall be allocated to the forest road and trail development work. This constitutes an amendment to the basic Section 23 of the Federal Highway Act. The second proviso authorizes the Secretary of Agriculture on or before January 1 preceding the beginning of any fiscal year to apportion and obligate the amount of money authorized for appropriation for that year.

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The bill to create a Great Plains Forest Experiment Station, introduced in the House by Representative Luckey of Nebraska, has passed both the Senate and the House and is now before the President for signature. This bill amends the McSweeney Act by providing for work in a region in which forest planting and the care of woodlands is a primary objective of many thousand farmers. The need for such a station was sharply brought to attention by the Shelterbelt Project which found a minimum of information available when work began. How soon the station can be established will depend upon the generosity of Congress. Possibly the station can be organized as early as 1938.

WOODY FOOD PREFERENCES OF THE SNOWSHOE RABBIT IN THE LAKE STATES

The kinds of woody plants eaten by the snowshoe rabbit in any one locality are quite largely determined by the species present and their relative abundance. There are, however, a few plants distributed throughout practically the complete range of these animals which make up a large part of their diet. Among the deciduous species young aspen, willows, and the birches are probably the preferred foods. Others are readily eaten but to a much lesser degree. These include hazel, alder, dogwood, red oak, silver maple, wild rose, cherry, raspberry, and sumac.

In the coniferous group, the rabbits show a decided preference for jack pine, white pine, and tamarack. Other evergreens less frequently eaten, but commonly damaged when other food is scarce, include Norway pine, white spruce, Scotch pine, and white cedar. Black spruce and balsam fir are much less often utilized.

Seldom do the animals cut off stems or twigs which are more than a half inch in diameter. Usually, however, they nip off the buds or the tender portions of the twigs such as the branch tips or gnaw the bark. The amount eaten of the portion cut off varies anywhere from zero to one hundred percent. Woody plants are used as food mainly during winter but considerable amounts are also consumed during the spring and fall months. In summer this diet is largely replaced by a more succulent menu of the tender grasses and herbs.

It is thus evident that as far as damage from rabbits is concerned the critical period for coniferous plantations is the fall and winter months. Any scheme for control of depredations by these animals should, therefore, take this fact into consideration. - Technical Note, Lake States Forest Exp. Sta.

SHOULD SMALL TREES BE TURPENTINED?

In answer to the above question, Southern Pine Forestry Notes No. 10 of the Southern Pine Association for 1936, is quoted:

"Studies in naval stores indicate frequent turpentining of longleaf and slash pine trees having a diameter less than that which may profitably be worked. While it is likely that the optimum minimum tree diameter for naval stores will vary locally, it should be pointed out that working trees under a 9-inch diameter limit will generally be unprofitable. In this connection, it should be pointed out that only about 8 years are required for tree to increase 2 inches in diameter. Experiments conducted by the U. S. Forest Service show that gum yield is closely related to the size of the tree and that yields mount rapidly with larger diameters. For example, trees 11 inches in diameter at breast height produce approximately twice as much gum as 7-inch trees. In fact, a minimum diameter of 11 inches has much in its favor, but because of pressure of economic factors, might be difficult to effect unless it is approached gradually. Not only will this higher minimum limit increase current yields, but it also makes more readily attainable three successive faces, if desired. Also, since facing a tree considerably lessens its ability to increase in volume, a larger tree will result in a much shorter time.

"The following table presents naval stores yields that may reasonably be expected from trees of given diameters.

YIELDS OF NAVAL STORES FOR 1 YEAR
BASED ON DIAMETER OF TREE

Diameter at breast height Inches	Face width (One face) Inches	Naval-stores yields *Units per crop
7	7	26
9	9	39
11	11	51
13	12	66
15	12	75

* 3½ barrels of rosin and 1 barrel of turpentine."

CCC HAS DEVELOPED A LANGUAGE

Harley Janelle, a junior forester in the U.S Forest Service, reports that a visitor to Vermillion Camp on the Superior National Forest in Minnesota recently overheard the following conversation between two CCC boys:

"Hey, Greaseball, got a stiffy?"

"I've got some sawdust and blankets."

"Got a firestick?"

"Boy, you certainly need those dog kennels of yours for this mud, don't you?"

"Pontoons would be better."

"Yeah, I was on them today in the brush, and the snow was so soft and I stumbled so much I just about went brush batty."

"See any pin-cushion squirrels?"

"Yeah, two of 'em."

"Must be time for chow; there goes the dog rubber after the pill pusher and the Louie."

"The Louie's getting hard on regulations; we've got to have on our shotguns, tie, O.D. shirt and everything."

"Can you treat me to a bottle of slough water after chow?"

"Naw, won't even be over there; gonna hit for the hayloft."

"You can't do that. The sin-buster is talkin' tonight in the Rec hall."

"Oh, oh, I forgot. Here comes a K.P. to blow the whistle. Chow! Gimme your rake a second."

This was rather astounding to the visitor, but later in the mess hall:

"Hi, smoke, gimme the submarine turkey; pass the O'Connors and the mud along with it."

"O.K. Wimpy, how's the dynamite and grass? Heck, I'll take some anyway; toss the sand along with it."

This was too much for the honored visitor. When the meal was over, he cornered a youth in the act of begging for a rope.

"Say, fella, I want you to give the meaning of a few words."

The youth obligingly told him that: a Greaseball is a truck driver; a stiffy is a cigarette; sawdust is tobacco; blankets are cigarette papers; a firestick is a match; dog kennels are shoes; pontoons are snowshoes; brush batty is a term for going more or less insane from work in the woods; a pin-cushion squirrel is a porcupine; chow is dinner; a pill pusher is a doctor; a Louie is a lieutenant (Commanding Officer); shotguns are trousers (issued to enrollees); O.D. shirts, official dress (issued to enrollees); slough water is pop; the hayloft is the bunk; a sin-buster is the minister; Rec hall is the recreation hall; a K.P. is a helper in the kitchen; a rake is a comb; a submarine turkey is a fish; O'Connors are potatoes; mud is coffee; dynamite is beans; grass is cabbage or lettuce salads; sand is sugar; a rope is a cigar; shingles are toast; sails are ears, and an incinerator is a pipe. - R-9 News Release

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SERVICE BULLETIN

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>
> Theodore Roosevelt

Vol. XX No. 14 Washington, D. C. July 6, 1936

CONFERENCE ON UP-STREAM FLOOD CONTROL

Problems of "up-stream" engineering in relation to flood control and land conservation will be discussed at a conference of experts from the United States and foreign countries in Washington, September 22 and 23.

The conference will be called by a special committee appointed by President Roosevelt. Members of the committee are H. H. Bennett, Chief of the Soil Conservation Service, Morris L. Cooke, Administrator of the Rural Electrification Administration, and F. A. Silcox, Chief of the Forest Service.

The Department's Press Service has made public the following letter from President Roosevelt to Secretary Wallace pointing out the need for coordinating land use principles with existing knowledge of down-stream engineering methods in federal planning for flood control and land conservation.

June 16, 1936

Hon. Henry A. Wallace
Secretary of Agriculture
Washington, D. C.

My dear Secretary Wallace:

Up-stream engineering will have a major part in efforts to save the land and control floods, and for that reason it offers a broad field of opportunity for the engineering profession. I am therefore in hearty accord with your suggestion that there be held an open conference on the subject in the early fall. The date might well be in proximity to that of the Third World Power Conference in September, in the hope that some of the distinguished foreign engineers attending the latter may be interested also in contributing to the proposed conference.

There are indications that a substantial body of technical information on the control of little waters is now available in the scattered records of American experience — Federal, State and professional. The urgent problem is to bring these data together into a coordinated body of engineering knowledge so that public officials and engineers may have a more definite picture of up-stream engineering as an important field of public and professional activity.

There is a wealth of experience and data as to down-stream engineering and works required for navigation, power development and flood control -- levees, large dams, great reservoirs and channel improvements on major streams. But necessary as these are for the safeguarding of those who live in areas subject to destructive floods and of property located therein, it must be remembered that down-stream waters originate largely in up-stream areas. The objects of up-stream engineering are through forestry and land management to keep water out of our streams, to control its action once in the stream and generally to retard the journey of the raindrop to the sea. Thus the crests of down-stream floods are lowered.

In accordance with your further suggestion I am appointing as a committee to organize and promote such a conference or institute; Hugh H. Bennett, Chief of the Soil Conservation Service, Department of Agriculture; Morris L. Cooke, Administrator of Rural Electrification Administration; and F. A. Silcox, Chief of the Forest Service, Department of Agriculture.

Very sincerely yours,

(Signed) Franklin D. Roosevelt.

A TRIBUTE TO THE MEMORY OF MAJOR STUART

(From the Address by E. A. Sherman, at the Dedication of the Stuart Nursery, Kisatchie National Forest, Louisiana, June 17, 1936)

I can think of no better way to honor the memory of an outstanding forester than to name a forest tree nursery for him. I can think of no better way to honor the memory of Robert Young Stuart than by giving his name to this particular nursery -- the largest in the South, and one of the largest in the world. For Major Stuart, as Chief of the United States Forest Service, was particularly interested in the expansion of forestry in the South, and in the reforestation phase of our national forest conservation program.

Creation of this nursery on the Kisatchie National Forest was decided upon before his untimely passing; it is, then, a fruition of his desire; the sturdy growth from a seed of his planting.***

Through six years, Major Stuart, as Chief of the Forest Service, went through one of the most important phases of governmental forestry. It was a crucial period -- yet a period that caused few headlines in the papers. Glory, fame -- these things were forgotten in his steady, incredibly difficult fight for an expansion of forest conservation throughout a country that badly needed strong leadership to save its vanishing resources. The job that Major Stuart took over as head of the Forest Service needed, cried for, a man of exactly his calibre. Strong, sure, unhurried, unflustered -- and hardheaded in matters he knew to be right -- he kept the Forest Service moving forward, strengthening its position, spreading more valuable information, moving toward that time he must have felt was coming when national attention and national interest would center as never before upon the Forest Service's function for the good of the nation. It is to the end of everlasting Justice that he lived to see our national policy embrace conservation as one of its major programs, in strong, liberal support of the principles he had labored to uphold.

His name lives on; his work lives on; his spirit is far from forgotten among the men of the Forest Service who worked with him, fought beside him, trekked the wildernesses with him. Without being too fanciful, I think we may consider that each of the millions of trees which will grow from the seedlings produced in the Stuart Nursery will bear some part of his indomitable spirit.

It is difficult for me to speak of "Bob" Stuart without personal emotion. I knew him almost as a father knows his son. After his graduation from Yale in 1906 his first regular assignment in the West was as my Forest Assistant at Missoula, Montana, when I was a Forest Supervisor. From our first meeting to the day of his death, ours was an association of perfect understanding. During the first few years of that association he was my subordinate; during the last six he was my chief. I rejoice that no unkind word ever passed between us and that I never knew him to give utterance to an unworthy thought.***

The story is told that early in 1933 one of President Roosevelt's advisors came to Major Stuart and asked him if, within a few weeks, the Forest Service could put some hundreds of thousands of men to work on useful projects in the country's forests. Perhaps Bob Stuart swallowed a little, but he answered simply, "Yes".

"But a hundred thousand men is a lot of men", the advisor said. "Maybe you don't realize what a large order that is."

"You don't know the Forest Service", was Bob Stuart's answer.

It might be added that he didn't know Bob Stuart.

That was the beginning of the CCC. Thus, with the U. S. Forest Service under the leadership of Major Stuart carrying a large share of the load, hundreds of Civilian Conservation Corps camps were established to begin the work of forest rehabilitation and improvement throughout the country, including southern forest lands.***

We of the Forest Service like to consider our jobs as being more important than the men who hold them. Others will carry on as we drop out of the picture. This is necessary, for we are working for the future. Major Robert Young Stuart held this viewpoint strongly; thus it is more than fitting that this nursery, which is growing young trees for future production of timber for sawlogs, pulpwood, and naval stores, should bear his name. The work he started continues; the trees we plant grow, bear seeds, which in turn reproduce the species. It is up to the people of the nation today, and to the future generations as well, to consider themselves as having accepted the stewardship of the forests--with definite obligations to take care of them while they live--and to pass on their ever-productive heritage to future generations.

PATH OF RESETTLEMENT A THORNY ONE

By L. F. Kneipp, Washington

The National Forests and Purchase Units include within their boundaries more than 10 percent of the land area of the 48 States and more than one-third of the estimated present timber supply. Within or adjacent to them are scores of thousands of so-called farms, and several hundred thousand people. One of the most vital problems confronting the Forest Service is to bring the forest lands, the forest resources, the related tillable lands, and the dependent population into a harmonious relationship under which each will contribute to the growth and welfare of the others.

At present the relationship of these four elements is discordant rather than harmonious. Due to the vagaries of our economic structure, there are today a startling number of rural communities within the National Forest sphere of influence in which the level of economic security is not greatly above the danger line. Project maps and statistics, where they have been made, bristle with negative showings of symbols denoting suitable workers occupying unsuitably located areas, or families situated on submarginal farms, or families dependent on relief for the minimum requirements of existence. And yet around and about these symbols are soils and trees out of which these people could with proper assistance create a happier economic future.

But notwithstanding that fact, readily actionable projects possessing the desired assurance of permanent economic bases are difficult to find. In the areas of most acute need, exploitation of natural resources has gone the farthest and the residues are insufficient to meet reasonable community needs. In such cases the future of the population depends on large scale public expenditures in the regeneration of national wealth, but no agency of the government other than Congress can guarantee that such expenditures actually will be made.

In other instances latent merchantable resources are available, but under governing laws and principles the local population cannot definitely be guaranteed priority of employment in the utilization of such resources, or that if so employed they will be paid a living wage, or that if it becomes legally practicable to establish priorities of employment and minimum wages that industry will not turn to other sources of supply not subject to such limitations.

In consequence, out of four additional projects, tentatively approved by Dr. Tugwell and recently covered by preliminary reports, only one meets the requirements of immediate action, and even that is contingent upon the National Forest expenditures per acre within the project working circle greatly in excess of the average expenditures on the National Forests. However, the need is so acute that the required preference in the allocation of available Forest Service funds seems fully to be justified and the project is being recommended for final approval by Dr. Tugwell. It is the Wellston Project within the Manistee National Forest Purchase Unit in the Lower Peninsula of Michigan.

WHAT IS FORESTRY?

By Earl W. Loveridge, Washington

The following letter argues for the usage of "forest" and "forestry" in a broader sense than they are often used. But is it not the answer to the present confusion of tongues and minds in the land management field?

The letter was written in connection with a discussion of the chances for employment in forestry and conservation, which is to appear in the forthcoming book "Migration and Economic Opportunity" by Carter Goodrich and associates.

Dear Mr. Goodrich:

The three revisions to "Chances in Forestry and Conservation", as described in your letter of April 24 appear very desirable, and I want to thank you for making them. I am ashamed to think that I may be credited at your expense, with coining the word "underemployed", (in place of my clumsy, less accurate "part-time employed") which strikes me as a particularly good one, and which I do not recall previously seeing.

Since you mention your interest in the point about the meaning of "forest", it presumably will not be boring to you if I take the opportunity of propagandizing you a little on it. I suppose it is propaganda for a member of a profession to urge a very broad interpretation of the profession's field. However, I have given a good deal of thought to the question of managing non-farm rural lands, i. e. open country not devoted to specialized and restrictive use for the production of farm crops. It seems to me that the major problems of management are common to all such land, whether timbered, brush-covered, desert, alpine, or open grass land, and that it requires a special type of training and experience. For another thing, lands of one class, say timber lands, do not normally occur in large unbroken chunks, but are interspersed with brush, grass, swamps, bare rock, sand and water. The job of managing any large area of open country therefore is a multiple-use job, requiring the coordination of many uses, and the utilization of many types of cover in addition to trees. I have been appalled at the recent confusion and overlapping and the lack of common purpose and common professional bonds among the many people now active in the development of plans and programs for a better use of the open country. I also see that the professional foresters managing public forests constitute the only group which has developed and is actually practicing the techniques of multiple-use management, and that the forest schools are the only places where appreciable numbers of men are being trained for this type of work.

My conclusion is that forestry should be treated as a generic term like engineering, encompassing timber management, wildlife management, forest recreation, agistory; just as engineering has its civil, electrical, mechanical, mining branches. If it isn't defined in this broad sense but in the limited sense of timber management, I foresee continued confusion, continued wasteful competition among groups for leadership in programs for the better use of the open country. Thus far I have not aired the idea around very widely, but those to whom I have had a chance to explain it, while it first strikes them as rather novel and probably unsound, have almost unanimously capitulated to support it when I produce Webster's Dictionary and read the meaning of the French and Latin roots, and draw the comparison between forestry and engineering and the need for common professional bonds among the several management specialists of forest areas, and ask that they name another group as an alternate.

Consideration such as this may not seem very fundamental to one who is concerning himself primarily with the lack of economic opportunity for the millions of people who are idle and penniless in a land of plenty, and I want to assure you that its acceptance is not my fundamental purpose in life either. However, I think it is important to a common sense solution of the present depression confusion of land-management programs.

Very sincerely yours,
(signed) E. A. FOSTER
Acting Chief, Division of Land Planning.

MEANING OF NAMES PROPOSED FOR NEW NATIONAL FORESTS IN ALABAMA

The name Conecuh proposed for the National Forest in Covington and Escambia Counties is from the Conecuh River which forms a portion of the boundary and drains a considerable portion of the area. The word itself is apparently of Muskogee Indian origin and is said to be a corruption of "Econneka" meaning "land of cane".

The name Talladega proposed for the National Forest composed of the Talladega and Oakmulgee Purchase Units is another name of Muskogee Indian origin. It was first applied to the town of Talladega, an ancient Indian village, and is derived from "italua" meaning "town" and "atigi" meaning "on the border". Literally therefore it means "Bordertown". The name Oakmulgee is of Creek Indian origin and derived from "oki" meaning "water" and "mulgis" meaning "it is boiling" or "boiling water". Oakmulgee Creek flows through the south central portion of the unit and drains a considerable portion of it. The town of Okmulgi, as it was sometimes spelled, was the first town founded by the Creek Indians after their migration from the West.

YE EDITOR DISCOVERS

The Forest Service has been given reasonable assurance that its present ERA program, including the transient camp program, involving in all some 20,000 men, will be continued after July 1. There is also some probability that the Forest Service program may be practically doubled in extent. Final decision in the matter is expected within the next few days. Present indications are that the distinction in wages and other factors peculiar to the transient camps will be eliminated in the new program and that the transients will be treated the same as other workers on Forest Service relief projects.

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The Congress which adjourned on Saturday, June 20, provided only sufficient funds to liquidate the Shelterbelt Project, $170,000 being appropriated to cover the cost of free distribution to farmers of some 65 million seedlings now in nurseries. During the period of liquidation, David Olsen will serve as the Acting Director. It will be possible for the Service to take care of all the people who were transferred to the Shelterbelt from other permanent positions and for whom lines of retreat had been retained. Unfortunately, it will be impossibe for the Service to give employment to most of those who had been reinstated or newly appointed. The Soil Conservation Service has indicated that it will consider employing members of the Shelterbelt personnel who cannot be given positions within the Forest Service organization. Seventy-six names have therefore been turned over to the Soil Conservation Service for its consideration. Some of the transfers within the Servie which have already been arranged for are:

Robert E. Clark, Division Chief in Operation, to the ECW organization in Washington.
Alva A. Simpson, Associate Director, to a coordinating position with the AAA with headquarters to be established somewhere in the West.
John H. Hatton, Inspector, to Assistant to the Chiefs of Range Management and Wildlife Management, Washington.
John D. Jones, Division Chief of PR, to Assistant in Operation, Region 3.
Louis F. Cottam, Inspector in Operation, to Inspector in Operation Region 3.
Harlan C. Maaske, Junior Administrative officer, to ECW, Washington.
L. J. Staab, Chief in Maintenance, to San Juan Forest, Region 2, as Senior Administrative Assistant.
John S. Bowen, Chief of Nurseries, to ECW, Washington.
Floyd M. Cossitt, to Region 8.

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The Yearbook of the Colorado Forest School for 1936 has been dedicated to "Ferdinand A. Silcox, Chief of the Forest Service, and through him to the entire organization which he heads." This issue contains an article by Mr. Silcox on "Present and Future Problems of the United States Forest Service," and an article by each of the Regional Foresters describing the happenings and hopes of his Region.

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Occasionally the Forest Service is called upon to report a seemingly fraudulent correspondence school to the Federal Trade Commission for investigation. This does not mean, however, that there are not many perfectly legitimate and worthwhile correspondence courses in Forestry. Members of the Service should not be discouraged from enrolling in legitimate courses, but they should very thoroughly investigate the reputation of the school and the courses offered before doing so. The Civil Service Commission does not acknowledge a correspondence school in forestry as a college of recognized standing, and therefore its graduates cannot qualify for technical forestry examinations.

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An order designating part of the Siskiyou National Forest in southwestern Oregon as the Port Orford Cedar Experimental Forest was recently approved by Mr. Silcox. This area of 9,192 acres on the south fork of the Coquille River will be developed for research and demonstration purposes by the Pacific Northwest Forest Experiment Station in collaboration with the Siskiyou National Forest. The timber, which is typical of the best stands of Port Orford Cedar, includes a variety of other commercial species, thus providing an excellent area for testing methods of cutting, logging, reforestation and fire protection, looking to development of the best forestry practices for these types.

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"Soil Science: Its Principles and Practice", by Wilbur Walter Weir, of the Southwestern Forest Experiment Station, has just been published by J. B. Lippincott Company. The book is intended primarily as a text for college students, but it also touches on a wide range of scientific and practical subjects involved in the administration of agricultural affairs. Besides clarified facts, principles, and theories regarding soils and soil fertility it discusses the fundamentals of soil classification, management, and conservation. This book has 574 pages and 134 illustrations.

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The principal changes made in the Taylor Grazing Act as amended by House Bill No. 10094 are:

1. An increase in area from eighty million to one hundred and forty-two million acres.

2. Broadens the Act in regard to mining location and prospecting.

3. Authorizes the Secretary of the Interior to accept lands in exchange either within or without the boundaries of a grazing district. Original bill was limited to lands within. Also that lands offered by a State in exchange lie within a grazing district and the selected lands lie in a reasonably compact body.

4. Provides for leasing and giving preference to owners contiguous to small isolated tracts, under terms prescribed by the Secretary of the Interior of areas of less than 760 acres. Original Act did not provide for leasing of less than 640 acres.

5. A new section added giving the President power to select a Director of Grazing and the Secretary of the Interior power to appoint Assistant Directors and such other employees as needed. Also makes it mandatory that Director or Assistant Directors who shall be appointed be bona-fide residents of the State they are to serve for the preceding one year.

6. Title II makes changes in boundary of Badlands National Monument.

AERIAL PHOTOGRAPHS FOR FIRE DISPATCHERS

Aerial photography becomes more than ever this year a factor in defense of the National Forests of Region One, with the placing of photographs taken from the air in the hands of fire dispatchers.

Dispatchers have been supplied with maps which show the degree of inflammability of forest fuels in various sections, and others which chart the travel time from points at which the men to be sent are stationed. They also have apparatus to locate quickly and accurately on their maps a reported fire.

Aerial photographs are now added to this equipment, together with a desk specially lighted and arranged to make all the equipment usable with greatest convenience.

By placing aerial photographs in the hands of the fire dispatcher, he is given advantages similar to those gained by municipal fire departments in their studies of models of sections of a city. Aerial photographs are viewed through a stereoscope, not unlike those once popular in American homes, and are in reality scale models of squares of territory upon which land section lines have been drawn.

Through full use of available maps and aerial photographs, a fire dispatcher, since he sees the ground conditions that have to be contended with, can determine whether the flames are in fuel and terrain conducive to rapid or slow spread, and if he deems it advisable, he can have supplemental help on the way long before the first attack men – the forest firemen – have arrived at the blaze.

Illustrative of the speed which is possible with the use of aerial photographs, J. B. Yule, in charge of the Office of Maps and Surveys, conducted a demonstration for one Forest. Fire locations were picked at random on the map. Within an average of 30 seconds' time, actually while the lookout was reporting over telephone, photographs were selected and placed upon the stereoscope ready for use. Descriptions by the lookout are cut to a minimum, thus saving considerable time.

-R-1 News Release

NEW CCC BRIDGE BUILDERS USE LOCAL FOREST PRODUCTS

Important in indicating new markets for Oregon and Washington forest products is the bridge just completed by the Forest Service across Trout Creek north of the Columbia River near Carson, Washington. This bridge, which was opened for traffic recently was designed by Forest Service engineers and built by CCC labor under Forest Service direction. Constructed entirely of creosoted or wolmanized Douglas fir manufactured and treated in Northwest plants, this structure embodies the latest engineering methods of wood use combining great strength and economy.

Devices recently introduced by the Forest Service largely substitute the superior tensile strength of wood for the horizontal breaking strength which previously handicapped wood as against other materials. The increasing use of wood for bridges is opening new markets for local products and effecting important savings in road construction.

Among other important bridges built by the CCC under Forest Service direction is the suspension bridge opened last year across the Rogue River near Grants Pass, Oregon, which is believed to be the longest single span wooden bridge in the world. The Trout Creek bridge is of the hinged arch type. The main span is 115 feet long and the laminated wooden deck is 18 feet wide. – R-6 News Release

"In point of morale and high devotion, skilful management of obstacles, and technical efficiency, the Forest Service is probably not surpassed by any other arm of Government." —Paul B. Sears, in "Deserts on the March."

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 15 Washington, D. C. July 20, 1936

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A PLEA AND A PRAYER

By John D. Guthrie, Washington

Recently I read "Little Waters", that unusual little publication issued jointly by the Soil Conservation Service, the Agricultural Adjustment Administration, and the Resettlement Administration. Later I had the pleasure of reviewing it for the Journal of Forestry.

This little book, as you who have read it know, bears the imprint of the Government Printing Office. While bearing this official seal, I understand that the format was prepared outside the Government. Regardless of this, it is a Government publication. In my Journal Review I made this statement:- "It is so attractive a book that one would never suspect its being a Government publication". A Journal reader has picked up that statement and asked me why more Forest Service publications could not be written in this style and issued in this form?

This Journal reader also states: "I was likewise impressed with this publication and for several years I have expressed my opinion that the type of publication and the literary style demanded by our editors are deadly impediments to 'public use and interest'. There is plenty of interest and life in all our work, including our most scientific efforts, and I believe that our results would get into use much more extensively and rapidly if we gave more attention to those features, as the Soil Conservation Service has done in 'Little Waters". I entirely agree with the above. For example — suppose that the famous Copeland Report had been condensed and issued in somewhat the form of "Little Waters". Would not its real import and lessons be far more effective with the lay reader? And after all, it isn't foresters and conservationists we hoped to reach in the Copeland Report; it was primarily the lay reader. Would not the Chief Forester's Annual Report be enhanced 1000 percent in readability and value if it were put out in some such form?

Modern scientific writing is a far call from what it was in the gay nineties. As my review reader aptly says: "Personally, I cannot understand why the 'matter of fact' style demanded by our research editors should be continued after it has been so thoroughly condemned by James Harvey Robinson ("Humanizing Knowledge"), and after Slosson, Eddington, Wells, Jeans, Russell, Talman, Heyl, Bell, and others have demonstrated so clearly that the public will pay good cash for scientific information if it is presented interestingly."

Also witness any issue of the Scientific Monthly, Popular Science, Science News Letter. Foresters would still seem to be writing in the style of a Thackeray or a Henry James.

In the above I mean no animadversions as to "our biggest publishing house in the world" (the Government Printing Office) -- they print pretty well the manuscripts as they receive them. It is a plea first to our scientific writers, to condense and lighten their style, to avoid big and long words and super-scientific phrases, to write clear English (which is always good English) to refrain from surrounding every statement with qualifications and provisos, -- ifs, buts, provideds, howevers; to refrain from attempting to give all the history and backgrounds of the subject treated.

Secon ly, this is a prayer to our editors -- able and hardworked as they are -- to refrain from ultra polishing, qualifying rephrasing, stereotyping, standardizing the manuscripts which come to them. Who of us has not seen a readable manuscript originally written in a clear and sprightly style, finally come back to the author from the various editorial desks with all its originality eliminated, all the sprightliness gone, all the vitality squeezed out? It is indeed a disheartening thing to the author.

For whom are we writing? Who is the audience whose interest we hope to catch and hold? Don't we want to make our meanings clear? Don't we want to "sell" our ideas primarily to the lay reader -- the public? Surely we don't write scientific bulletins solely for other foresters to read!

INCONSISTENT USAGE OF "AGRICULTURE"

By E. A. Foster, Washington.

In the habitual usage of the term "agriculture" as applying only to farming operations and the marketing and use of farm crops the Forest Service and the Department of Agriculture place themselves in a position of glaring inconsistency. One moment they refer to forestry as a non-agricultural activity, and the next they vigorously assert that it is a logical and important part of the agricultural program.

If forestry belongs in the field of agriculture, and I strongly feel that it does, must we not think of and use "agriculture" as an inclusive term covering the entire field of rural land-use?

Examples of the usage of "agriculture" in the narrow sense of "farming" are to be found in practically every statement dealing with both farming and forestry. As an example: Mr. Silcox's recent address before the National Rivers and Harbors Congress uses "agriculture" or "agricultural" throughout (seven times) in the narrow sense of "farming" or "farm" respectively. The same narrow usage appears repeatedly in the Copeland Report, in the Forest Service report to the National Resources Board, and in official correspondence, news releases and all forms of Forest Service and departmental publications.

Specifically, it is proposed that the Forest Service and the Department of Agriculture begin at once to use "agriculture" only in the broad sense of applying to all rural land-use, whether farm or non-farm.

It is further proposed that farming and forestry be considered as chief subdivisions of agriculture:

farming, the restrictive use of land for specialized crop production;
forestry, multiple-use of land for combinations of timber, wildlife and forage production and forest recreation.

NAVAL STORES TO HAVE CONSERVATION PROGRAM

By Perkins Coville, Washington

A naval stores conservation program for 1936 will be offered to turpentine producers under the Soil Conservation and Domestic Allotment Act, according to a press release issued by the Department on July 7.

A series of regional meetings were held at the principal naval stores ports as follows: Valdosta, Georgia, July 8; Savannah, Georgia, July 9; Jacksonville, Florida, July 10; and Pensacola, Florida, July 11. At these meetings the program was explained and a preliminary leaflet was made available on the "conditions of payment" and other details with respect to participation by any producer.

The Forest Service developed the technical features of the program and prepared the "docket" required before approval can be obtained for any program under the Soil Conservation and Domestic Allotment Act. In the above work, the Divisions of State and Private Forestry, responsible for the program in the field, had the invaluable assistance of Messrs. Eldredge and Harper of the Southern Forest Experiment Station and A. C. Shaw of Region 8.

Under the program, the turpentine farmers may cease operation on not to exceed 3500 crops of naval stores, preferably those crops composed mainly of faces on trees less than 9 inches in diameter. One condition of payment is that areas upon which production will cease will have received fire protection during the remainder of the current operating season. While it may be impossible for some of the naval stores operators, who have not already done so, to participate in organized fire protection systems this year, it is expected that should the program continue in 1937 a fire protection requirement and a restriction against the working of round trees less than 9 inches in diameter, and perhaps certain forest management requirements, will be made a part of the program.

Most of the forest area devoted to the growing of longleaf and slash pine (28½ million acres in the active turpentine belt) is directly tied in by ownership, lease, or market outlet with the gum naval stores industry. It would seem that a lower cost of producing naval stores can be secured under a better system of forest management. At the present time there are only about 16 working trees per acre in the average crop. Many trees too small to be profitable are forced into production because of the economic situation. Studies have shown that it is generally not profitable to turpentine trees below 9 inches in diameter. Under the best forest management a turpentine crop (10,000 working faces) could be supported on between 50 and 70 acres, whereas the average crop today covers 632 acres, or approximately 10 times as much area.

Payments under the program will be determined on the basis of face height. All faces to be retired from operation that are 66 inches or less in height will be paid for at 4¢ per face and those more than 66 inches, at 2½¢ per face, if the "conditions of payment" as given in the instructional leaflet have been met. The 3500 crops are calculated to be some 20 percent of the crops in production at the present time.

The program will permit any gum farmer to terminate operation on not to exceed 25 percent of his working trees on any given "turpentine place". Should the maximum of 3500 crops meet the "conditions of payment", it is estimated that these payments will total in the neighborhood of $1,200,000. It is also estimated that the cessation of operation on this number of crops for the remainder of the season subsequent to July 15 will bring the entire production of gum naval stores to 500,000 units for the 1936-37 season. The small producer will be protected, since there is no specified minimum size of naval stores operation which may make application under the proposed program. It is also apparent that the consumer of naval stores products will be protected, since a 500,000 unit production will result in a total supply in excess of the turpentine supplies during the past 3 years and substantially above the total annual disappearance of rosin and turpentine in any year since 1921.

A proposal for allotment of funds to be used in research by the Bureau of Chemistry and Soils and the Forest Service in their respective phases of the naval stores field was submitted to the A.A.A.

The more specific details of the program follow: the producer will cease chipping currently worked trees on or within one week prior to July 15 and remove his cups on or within two weeks prior to August 1 and keep out of operation until November 1 this part of his croppage (up to 25 percent of his total for any one "turpentine place"), for which he desires to make application for payment.

It is not to be expected that this program for the current year will completely remove all poor turpentining and woods management practices or that it will restore the lands controlled by the gum naval stores farmers to a permanent basis of economic use. It is believed, however, that the naval stores conservation program will have a beneficent effect and will start the industry in the right direction toward a more economic, scientific, and less wasteful use of a considerable part of the Nation's timberland resources.

HOW ECW HAS STIMULATED FIRE PROTECTION ON NON-FEDERAL LANDS

By D. L. Dorward, Region 8

Emergency conservation work has proved a stimulus to fire protection on State and private lands in the South. Funds for fire control purposes in the eleven States composing Region 8 increased from $455,000 in the fiscal year 1934 to $955,000 in 1936 -- more than doubled in a three-year period.

Excluding the Federal funds there are three contributing agencies: the State, the county, and the individual landowner. These represent three types of forest protection systems. Forest fire control operations center in the State Forest Service, and the system established may be a combination of State, county, and individual landowner type of protection.

In Region 8, however, there are clear-cut examples of each system. The State type is exemplified by the Tennessee protection organization. The fire control funds outside of the Federal allotment are derived almost entirely from State appropriations. Tennessee increased its appropriations for this purpose from $20,000 in 1934 to over $70,000 in 1936.

North Carolina represents the county-wide protection system, where the county appropriates funds to the State Forest Service for establishing a protective organization. Depending upon the funds available, this may include any or all of the following advantages: a detection system of lookout towers with telephone communication, paid fire wardens, organized fire-fighting crews, and fire-fighting tools and equipment. The ECW program has extended this system by erecting towers, telephone lines, and by breaking up large blocks of timberland with truck trails and fire breaks. In the three year period North Carolina leads all other States with an increase from $17,000 in 1934 to $60,000 in 1936, with about 60 counties cooperating.

The private landowner system is best exemplified by Georgia where several owners are grouped together into Timber Protective Organizations. These organizations work together with the State forestry officials and with the pooled funds construct and maintain towers, telephone lines, truck trails, and fire breaks. The ECW program has done much to encourage the protection of private timberland. The amount contributed by private landowners in Georgia increased from $26,000 in 1934 to $168,000 in 1936.

These figures show splendid achievement and an ability to take advantage of the opportunity to emphasize the beneficial importance of forests for public economic and recreational development. Real progress in Southern forestry is being made and will continue to be made, an accomplishment for which we can be proud. The State Foresters and their organizations are making forestry history in the South and are keenly aware of their responsibilities and opportunity. - R. 8 Bulletin

AIRPLANES TO SERVE FOREST FIREFIGHTERS

Tools and equipment for men dispatched to fires in remote sections of Region One will, in many cases, be delivered by airplane this year.

The latest experiment comprised delivery of 12 shovels, 12 Pulaski tools (combination mattock-and-ax), two crosscut saws 5½ feet long, beds and food for 25 men for one day. The entire outfit weighed 556 pounds, packed especially for dropping from a plane. White canvas wrapping was used to facilitate identification of the packages in the forest.

Delivery of the 25-man outfit was made in Pattee Canyon near Missoula, where the terrain is rugged and covered with dense timber, rocks and down logs. A small fire had been built to act as a guide target. The packages were dropped from elevations of 200 to 400 feet above the ground, 12 minutes being required to deliver them. All fell within a radius of 250 feet. No damage was done to the contents of the packages, and only one wrapper was injured, a six-inch hole being torn. - R-1 News Release

FUELWOOD MORE VALUABLE THAN LUMBER IN MINNESOTA

Fifty percent more fuelwood was produced from farm woodlots in 1934 than was reported by the United States Census of Agriculture for the year 1929. In the earlier year 1,163,000 cords of wood were reported cut for farm use or for sale, an average of 6.3 cords per farm, while in 1934, according to a brief field check conducted by the Forest Survey, production was estimated to be 1,744,000 cords, or 9.3 cords per farm.

Although the total amount of fuelwood cut was greater, the actual depletion of merchantable timber was less than commonly supposed. Survey figures indicate that practically two-thirds of the wood cut for fuel came from trees unmerchantable for lumber or other commercial products. Percentages ran as follows:

Cut from cull or dead trees	60 percent
Cut from logging and mill waste	5 percent
Cut from trees suitable for low-grade lumber	10 percent
Cut from sound 6 inch and 8 inch trees	25 percent

Of the volume cut on farms in 1934, 27 percent was aspen and cottonwood, 19 percent oak, 14 percent tamarack, 10 percent elm, and 3 percent pine. The remaining 27 percent was made up of miscellaneous hardwoods, mainly birch, maple, ash and basswood.

Fuelwood values vary with locality and with species. Common prices in the north are from $2.50 to $4.00 per cord of 128 cubic feet. In the southern counties where wood is more scarce and hauling distances are greater, oak and other heavy woods commonly sell at $6.00 to $7.00 per cord. At an average value of $5.00, the 1,744,000 cords of wood cut in Minnesota last year would have a total value of $8,720,000, which is twice the value of the lumber produced in the same year.

The great increase in fuelwood consumption during recent years can be attributed largely to the lack of ready cash on the farms. Farmers have not only been burning wood in place of coal and oil, but many have paid their bills by delivering fuelwood to merchants, schools, and courthouses. This is undoubtedly but a temporary situation in southern Minnesota, where both increasing scarcity of wood and improved facilities for distributing oil work toward the replacement of the former as an important source of heat. In the north, however, there seems to be no reason why wood should not continue to be the most satisfactory fuel for rural consumption. - Technical Note, Lake States Forest Expt. Sta.

YE EDITOR DISCOVERS

In submitting the Appropriation Estimates for the fiscal year 1938 to the Secretary, Chief Silcox wrote as follows:

"In 40 of our 48 States, in Alaska and Puerto Rico, public policy has placed in our hands 170 million acres of land; one of each ten American acres. We protect these acres - regulate their use. But these are merely the primary functions in our real task of development and management.

"Management of these great public properties means searching out their every potentiality for public service, their every possible source of sustained wealth and revenue production, and putting the two together in a pattern of land management which will fit into and promote sound national economy. Our management today reaches directly into the lives of millions of our rural population, giving them employment supplemental to agriculture and local industry, stabilizing their lives and homes. Indirectly but importantly it touches and affects beneficially, in direct ratio to our managerial efficiency, the lives and well being of all our people.

"Outside the National Forests in private ownership lie 500 million acres more of forest land, nearly one-third of America's total land area. Little of it is managed as it should be; most of it is outrageously mismanaged. All of it presents to the Department, and particularly to the Forest Service a challenge which we can continue to treat lightly only at the cost of our own self-respect and of irreparable public loss.

"These are the basic situations underlying our estimates. I appreciate that the increases sought are relatively heavy. My responsibility impels me, however, to lay before you, regardless of financial or other expediencies, this budget which I deem only a reasonably adequate financial base for the long-term program necessarily involved."

New items are included for Forest Experiment Stations in Puerto Rico and the Great Plains Region, and for the expansion of farm forestry research. An item of 2½ million dollars was included for farm forestry cooperation and a request for 5 million dollars for acquisition of lands under the Fulmer Act.

Aside from the new items the estimates in general renew the requests which were submitted a year ago and which were granted by the Budget Bureau and Congress in varying degree.

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According to the Washington Post of July 5, the latest poll conducted by the American Institute of Public Opinion shows that 82 percent of the Nation is in favor of continuing the C.C.C. Camps.

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In the June 8 issue of "TIME", under the heading "Orphan Seedlings", a statement was published that 80 percent of the trees planted in the Plains Shelterbelt in 1935 has perished. As a matter of fact the average survival for 1935 was about 75 percent, which compares favorably with forest tree planting in any part of the country. A letter has been sent to the Editor of Time requesting that this misstatement be corrected.

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Plans are being formulated for the establishment, somewhere in Florida or Georgia, of a memorial plot and marker to the late Doctor Austin Cary. According to preliminary plans this memorial will be in the form of a large boulder with bronze plate, around which will be planted 71 longleaf pine trees. Mr. Hastings, of the Division of State Cooperation, has been selected to cooperate with the Associate State Forester of Florida in furthering the project.

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"Boom and Bust", by F. A. Silcox, an article contrasting the results of a "cut-out-and-get-out" policy with good forestry practice, appears in the July issue of Country Home.

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The C. C. C. idea is to be extended to girls in the near future, when the President asks the Budget Bureau for necessary funds from WPA money to establish camps, according to the Press.

It is planned to organize 50 camps throughout the States, but only where States ask for them, in which between 3000 and 5000 jobless women can be accommodated. According to Aubrey W. Williams, National Youth Administration, "the campers will be drawn from relief rolls, will engage in educational, vocational, and recreational projects as well as doing some light landscaping and similar work."

The girls will do the camp work, cook the meals, wash the dishes, make the beds, and attend regular classes in home economics, health, training in citizenship, and other useful subjects.

Present plans contemplate the establishment of camps in Y.W.C.A. and 4-H Club camps, unused school buildings, hotels, etc. - any place WPA can get rent free.

Cost to the Government is expected to be around $10 a week per girl, which will include $1.50 a week spending money for each enrollee. Asked if the girls would follow the C. C. C. example of wearing uniforms, the director and original founder of camps for women replied with a vigorous "NO".

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A memorial forest comprising 3,840 acres on the watershed of Little Santeetlah Creek in Graham County, North Carolina, has been established to honor the memory of the author of "Trees". The Joyce Kilmer Memorial Forest lies within the boundaries of and will be under the administration of the personnel of the Nantahala National Forest. It is located within a proposed Primitive Area and will be available to the public for recreational, esthetic, and scientific purposes.

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Under new Department regulations, effective July 1, prior authority must be obtained from the Secretary for any travel between the Continental United States and Alaska, including employees stationed in Alaska as well as those having headquarters in the States. For many years official travel between the States and Alaska has been performed without special authorization.

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In order to determine the extent "Civil Service" has been followed in connection with our emergency program, the Secretary's office has requested information concerning our facilitating (supervisory, technical, clerical, etc.) Personnel as of May 31, exclusive of persons taken from relief rolls, enrollees, etc. Report is requested on the total number of positions; divided as to those for which the Civil Service ordinarily provides registers, and those for which the Civil Service does not provide registers. It is requested also that in our report we show how many positions in the first category were actually filled by Civil Service appointees, and how many, both technical and non-technical were filled by non-Civil Service employees.

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The National Geographic Magazine for July carries an article, "Down Idaho's River of No Return", by Philip J. Shenon and John C. Reed, describing the expedition down the Salmon River, during which occurred the death of Howard Flint of Region 1. The article has many good words for the Forest Service.

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Public contacts in the form of meetings addressed and radio broadcasts made by Region 9 Forest Officers during 1935 were as follows:

Number of Speakers	161
Number of Meetings	759
Attendance	91,178
Radio Talks	39

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Raymond D. Garver, in charge of the Forest Survey, was struck by an automobile and very badly injured after alighting from a bus at Thirty-Second Street and Military Road, N.W., on July 4. Although suffering from concussion of the brain, a possible fracture of the skull, and badly injured leg, his condition is reported by the doctors to be favorable, and they expect that he will make a complete recovery.

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BASSWOOD TREE WAS INDIAN ROPE FARM

When the Indians of the Great Lakes region needed a stout rope, bag or basket, they found it in the bark of the nearest basswood tree, Volney H. Jones, University of Michigan ethnobotanist, told the Michigan Academy of Science, Arts and Letters, at a recent meeting.

This standby of the redman might well be studied by modern technicians as a possible emergency substitute for imported hemp and sisal, if war conditions ever cut the supply of the latter fibers, he suggested.

By such simple preparation as soaking and rolling under the palms, the Indians made a very satisfactory cordage from the inner bark of the basswood. Heavier strips made a wide variety of other utensils and textiles. Other barks sometimes used included that of the slippery elm, white cedar, and moosewood or leatherwood.

For finer cordage and textiles, the Indians went direct to nature for the fibers of the Indian hemp, swamp milkweed, and some species of nettles, Jones stated. In Russia, Sweden, and Japan the basswood fibers are today used for rope, string, shoes, nets, baskets, packing, and paper. - University of Michigan News Release

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES. WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 16 Washington, D. C. August 3, 1936

CCC CONSERVATION CONFERENCE

Two hundred and ten delegates from eight Western States in the Ninth Corps Area met in Portland, Oregon, on July 2-3 in a most successful CCC Conservation Conference. Federal and State agencies participating in the meetings included: Forest Service, Biological Survey, Soil Conservation Service. National Park Service, Bureau of Reclamation, Division of Grazing, Office of Education, State Forester, U. S. Army, and delegates to the National Educational Association Conference held in Portland at the same time.

July 2 was given over to an Educational Conference under the direction of Dr. J. B. Griffing, Educational Adviser for the Ninth Corps Area. Nearly 600 people attended this meeting to hear CCC educational problems discussed by such noted speakers as Dr. John W. Studebaker, U. S. Commissioner of Education; Howard W. Oxley, Director of CCC Education; Dr. A.A. Douglass, Chief Division Secondary Education, Sacramento, California; Geo. E. Griffith, Forest Service, Portland, Oregon; Major A. J. McChrystal, Asst. Adjutant General, Ninth Corps Area. Enrollee Edw. L. Kost of the CCC, Vancouver Barracks, Washington, also spoke on "What the CCC Educational Program Has Meant to Me."

The second day of the conference was given over to conservation problems with Associate Forester F. H. Brundage, Region 6, presiding. The keynote address was given by Regional Forester Evan W. Kelley of Region 1, followed by conservation-education papers by representatives of the various technical agencies including: Frank A. Kittredge, Chief Engineer, National Park Service; Regional Forester R.H. Rutledge, Region 4; H. A. Thomas, representing Oregon State Forester; A. D. Ryan, Deputy Director, Division of Grazing, Salt Lake City, Utah; G. B. Swier, Soil Conservation Service, Dayton, Washington; J. S. Moore, Bureau of Reclamation, Yakima, Washington; C. J. Olsen, Forest Service, Ogden, Utah; Stanley G. Jewett, Biological Survey, Burns, Oregon; E. C. Covey, CCC Vocational Trainer, Ogden, Utah; J. G. Lindley, Soil Conservation Service, Washington, D. C.

Resolutions calling for greater participation by camp education advisers and CCC supervisors and facilitating personnel in the job training program; approval of classroom education but giving job training first place in the CCC educational program, were passed. Mimeographed copies of all papers presented at the conference will be assembled and sent to each CCC camp superintendent in the Ninth Corps Area.

Regional Forester S. B. Show, keyman appointed by the CCC Educational Advisory Committee at Washington, D. C. to plan the Ninth Corps Area conference desires to express his thanks to all technical agencies for their fine cooperation in helping to make the conference a success. Special thanks are due to Region 6 for their assistance and for a very attractive program issued for the meetings. The California Region was represented by Assistant Regional Forester W. I. Hutchinson and ECW Inspector Leon G. Johnson. - R-5 Bulletin.

FORESTRY EXODUS TO EUROPE

By John D. Guthrie, Washington

European foresters will see quite a few American foresters along their forest trails during the next few months. They will not only see them and welcome them but will have many questions to answer for the inquisitive Americans. The main objectives of this exodus are the 2nd International Forestry Congress to be held at Budapest, Hungary, September 10-17, and the International Union of Forest Research Stations in Hungary immediately prior to the Congress. The first International Forestry Congress was held in Rome in 1926, and was attended by some 12 American foresters and 8-10 American forestry students.

The reasons back of the 1936 exodus are the Oberlaender Foundation tours, which account for 5 foresters and 2 lumbermen, sabbatical leave for a forester or so, and a yearning to see something more of Europe's forests and forestry for the others. At the present writing 12 foresters and two lumbermen plan to attend the Budapest forestry congress. All foresters who are members of the Society of American Foresters will attend as delegates of that society.

The Congress is organized into 9 sections as follows: I. Forestry policy, economics, statistics and legislation; II. Forest management, research and education; III. Timber trade and forest products; IV. Forest utilization and industry; V. Mechanical and chemical technology of wood; VI. Silviculture and plant production; VII. Regulation of forest streams and forest and soil protection; VIII. Rural economy, Nature protection, Tourist recreation; IX. Tropical forestry.

Judging by the 1926 Rome meeting, there will probably be 50-60 nations represented by several hundred delegates. Several field trips are scheduled. American headquarters will be at the Grand Hotel Hungaria. It may be a "hot" meeting, as it is understood that paprika is the national dish of Hungary!

It may interest Bulletin readers to know who is going since all of the foresters are either now in the U. S. Forest Service or were formerly. Here they are:

1. F. A. Silcox, Chief Forester, Chairman of the American Delegation, and one of the four Deputy-Presidents of the Congress. He will spend several months making a study of special forestry subjects or subjects closely related to forestry and conservation. Oberlaender Foundation. Sailed in early July.

2. C. E. Rachford, Assistant Chief, who will accompany Mr. Silcox. Rachford is particularly interested in grazing and soil erosion and water control in mountainous areas, as well as other special subjects. Oberlaender Foundation. Sailed in early July.

3. Raphael Zon, Director of Lake States Forest Experiment Station, official American Delegate to the International Union of Forest Research Stations, but will also attend the Forestry Congress. Sails in early August.

4. John D. Guthrie, General Inspector, ECW, and Vice-Chairman of the American Delegation, will present a paper at the Congress on "The American Civilian Conservation Corps." Attended the Rome Congress in 1926. Will visit afforestation projects in England and Scotland prior to the Budapest meeting. Going "on his own" in August.

5. T. R. C. Wilson. Section of Timber Mechanics, Madison Laboratory. To study European projects in his line. Sailed in May.

6. Hugh P. Baker, President, Massachusetts State College. Will be in Europe on other matters but will attend the Forestry Congress.

7. Ovid Butler, Manager of the American Forestry Association and Editor of "American Forests." Outside of the Budapest meeting he will spend some time in Germany, Austria, Denmark, Sweden, and Finland. Oberlaender Foundation. Sails on August 8.

8. Tom Gill, Forester for the Pack Forestry Foundation and Educational Board. Will spend his time mostly in Germany on special projects before the Budapest Congress. Oberlaender Foundation. Sails on August 8.

9. John Woods, Forester, West Coast Lumber and National Lumber Associations. Germany and Austria. Oberlaender Foundation. Sails in early September.

10. Shirley Allen, Professor of Forestry, University of Michigan. Sailed with family in June for extensive European tour. Sabbatical leave.

11. Nelson C. Brown, Professor of Forest Utilization, N. Y. State College of Forestry Syracuse. Will be in Europe and will attend the Budapest meeting. Sails in August.

12. Richard R. Fenska. Bartlett Tree Experts, New York. Will attend the Research Union and Forestry Congress. Sails in late August. "On his own."

13. Frank Kennett. Kennett Lumber Co., Conway, New Hampshire. Germany, Austria, and Czechoslovakia. Oberlaender Foundation. Sails in late August.

14. E. L. Kurth, President, Southern Pine Assn., Keltys, Texas. Germany, Austria, and Czechoslovakia. Oberlaender Foundation. Sails in late August.

15. Barrington Moore, Taunton, Somerset, England. There is a possibility of Moore's attending provided his health will permit. He has been ill for some time.

WILDLIFE ACTIVITIES ON THE NATIONAL FORESTS

By John H. Hatton, Washington

Until summed up and put down in black and white, I think few of us fully realize the large part being taken and the contributions that are being made by the Forest Service to the wildlife subject. Congressional committees appreciate increasingly what is being done and the general public are rapidly coming to appraise this work in its varied relations. We may sometimes shy at report requirements, especially when they ask for new details, but the data thus accumulated are invaluable not only from an informational but from a factual plan-building standpoint.

A large volume of detailed data was recently obtained from the field on the National Forest fishing resources. This was in response to a special request by Congressman Robertson, Chairman of a select committee on conservation of the wildlife resources, House of Representatives. These requests from those on the outside looking in help to adjust our information more in keeping with what people want to know on the subject. They also sometimes bring out needed changes in our methods of stock taking. The information has been summarized for the committee and will be printed.

There are approximately 70,000 miles of fishing streams on the National Forests. To these may be added many thousands of acres of natural ponds and lakes, and these in turn are supplemented with many artificial bodies of water suitable for game fish. Then, there are many thousands of miles of streams and acres of water in the foothill areas beyond and outside the National Forest boundaries. So far this statement is too general. It should be tied down to figures on actual numbers and miles and acres as in other phases of the study recently made, for instance:

During the past three years (1933-35, inclusive) the Forest Service planted on the National Forests 218,201,400 fish from Federal and 183,135,900 from State hatcheries, a grand total of 401,337,300 for that three-year period. The information shows 30 different species of fish planted. The figures record an increase of 45 percent in 1934 over 1933, and 396 percent in 1935 over 1934. The data obtained show fingerling sizes constituted about one-third of the plantings in 1933, a little over one-third in 1934, and in 1935 there were planted five times as many figerlings as fry. In other words, much former wastage is rapidly being reduced in the fish planting activity.

During that same three-year period 59 lakes were constructed involving a total acreage of 5,303.7. This information has been accumulated by individual projects showing acres of water impounded, size of dams, location and plans for the development of fishing, and recreational opportunities.

The stream improvement information shows 406 streams on which work was done, construction of 3,755 dams, 207 retaining ponds, and 19,298 other structures such as deflectors, shelters, bank protection, and other improvements. The total of all the stream improvements for the three-year period is 31,084 structures.

The figures on stream planting, lakes constructed, and stream improvement work are indeed imposing and help to visualize the contributions of the Forest Service to the pastime of fishing and mountain recreation. Emergency appropriations have materially aided in all the fishing resource activities.

CAUSES OF EROSION ON THE BOISE RIVER WATERSHED

By R. S. Campbell, Washington

Results of a recent study of erosion on a portion of the Boise River Watershed in Idaho, an area recently added to the Boise National Forest, should be of interest to everyone dealing with watershed problems. The work was conducted by the Forest Service, which has been assigned primary responsibility for research on forest and range lands by the Secretary of Agriculture. The study involved 371,313 acres of the most critical part of the mountainous range lands on the watershed which furnishes the entire water supply for 335,000 acres of irrigated lands in the Boise Valley. The full results will be published shortly in a technical Bulletin by Fred G. Renner.

Accelerated erosion is in progress on nearly two-thirds of the portion of the watershed examined. Outstanding relationships of several factors to erosion on the area are as follows:

Gradient--The amount and severity of erosion varied directly with gradient up to approximately 35 percent.

Aspect--The causes of erosion were mostly operative on southern exposures.

Soil.--The loss of litter and organic matter through the removal of the topsoil reduced resistance of soils to erosion.

Plant Cover.--Erosion conditions differed sharply on various plant types. Weed and grass areas in particular suffered severely, apparently because they were previously most disturbed by rodents and livestock grazing.

Density of Vegetation.--The vegetation ,when depleted to a stand of less than 30 percent, was largely ineffective in the prevention or control of erosion. A 40 percent cover sufficed to prevent gully erosion under normal conditions of grazing use in the Boise Region.

Rodents.--Rodents were an important factor in contributing to erosion.

Accessibility to Livestock.--Erosion varied directly with the degree to which the vegetation cover was depleted and the surface conditions disturbed by live stock grazing. This appeared to be far more important than any of the other factors studied.

The results point to the necessity of immediately restoring the plant cover to a density of at least 30 percent, and initiating improvements in range and livestock management which will relieve conditions on areas particularly susceptible to erosion. They also indicate the type of more intensive range research needed. Such studies are already being conducted by the Intermountain Forest and Range Experiment Station.

THE ACCEPTABLE LIST OF EXPLOSIVES FOR U. S. FOREST SERVICE

Cognizant of the many obstacles which confronted the Forest Service in the purchase of explosives and the subsequent loss involved when explosives of unknown merit were obtained in competitive bidding, T. W. Norcross, Chief, Division of Engineering, invited representatives of leading manufacturers to meet with Forest Service engineers for the purpose of devising ways and means of securing a more satisfactory purchase procedure. At that meeting Mr. Norcross suggested a program for study of the peculiar application of explosives to Forest Service usage and expressed his desire for a common understanding of terms in order that specifications might be clarified to the satisfaction of both contracting parties. Instant approval was registered by the representatives and a committee was formed composed of those present and later augmented by the addition of Dr. Charles F. Munroe, formerly of the Bureau of Mines, a recognized expert on explosives.

A circular letter to all Regions requested that their use of explosives and types best suited for each be tabulated and forwarded to Washington. This information was turned over to Dr. Munroe for analysis to determine the satisfactory characteristics and limitations of each explosive. A series of tests were devised to cover (1) chemical analysis (2) physical examination (3) unit deflective charge (4) rate of detonation (5) water resistance (6) explosion by influence (7) pendulum friction (8) freezing and (9) fire setting hazards. Explosives proposed for Forest Service use were subjected to these tests by the Bureau of Mines at the request of the manufacturers. At the same time manufacturers were invited to furnish samples of other explosives to ascertain their particular value for National Forest projects. Out of the mass of data assembled, a digest was proposed and titled, "U. S. Forest Service List of Acceptable Explosives."

The Acceptable List consists of the Nitro Glycerine and the Nitro Starch explosives. It specifies the most suitable explosives for use on any given project, where it can be produced, the brand name under which it may be offered and the name of the manufacturer. As new explosives are tested by the Bureau of Mines and found suitable, or if existing brands are changed or discontinued, the necessary revisions will be made to keep the Acceptable List up to date.

Any attempt to approximate the potential value of the Acceptable List at this time would be difficult. Already it has achieved the twofold purpose outlined by Mr. Norcross. There is no questioning the fact that both time and money will be saved the Forest Service, since the approved explosives have recently been placed on the General Schedule (Class 4) by the Procurement Division, thus permitting direct purchase in either large or small quantities. Likewise the possibility of injury and the wanton destruction by fire-setting explosives has been minimized. Prior to being placed on schedule, the Acceptable List had already been adopted for Emergency Conservation Work, (Supplement No. 4 E.C.W. Safety Regulations) as the standard for purchases and use of explosives in all C.C.C. camps, indirectly benefiting the Biological Survey, National Park Service, Bureau of Agricultural Engineering, Soil Conservation Service, and Bureau of Reclamation. Now it is available to all branches of the Federal Government.

YE EDITOR DISCOVERS

Through the efforts of Ranger McCormick, of the Santa Barbara National Forest and the interest and cooperation of Captain Sewell, representative of the Goodyear Tire and Rubber Company, a test flight of the Goodyear blimp "Volunteer" was made on the Santa Barbara recently. The purpose of the trip was to determine the usefulness of lighter-than-air craft in observation work and the freighting of supplies and men to inaccessible forest areas. In addition to two Goodyear pilots, Ranger McCormick and F. W. Funke, of the office of Fire Control, Region 5, made the flight.

After making the trip Mr. Funke said: "It is my opinion that the 'Volunteer' is a very valuable ship for all fire control work from observation to cargo carrying and I earnestly urge that arrangements be made with the Goodyear Tire and Rubber Company for the use of the ship on project fires in the area south of San Francisco. One trip is all that will be needed to demonstrate the superiority of this type ship over heavier-than-air craft."

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John Q. Enrollee's favorite way of getting hurt in the woods, according to figures collected in May, is to cut himself in the shins with a glancing axe. Two hundred and forty-three of the hand tool accidents in May (almost half of the total) were caused by axes, and 127 of these were leg or foot cuts, sustained when the axe glaced from the tree or log being chopped, or went through a small branch, injuring the "Peavey" or one of his pals.

The Superintendent of Camp Walkerville, F-26, Michigan, has developed shin guards for the use of scalpers. The idea may spread, and when it does, if you are working with something sharp, get in line for a pair of shin guards and help lower the old accident rate some more.

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Ernie Pyle, writing in the Washington News, says:

"A belt of trees, or a belt of soy beans, or a belt of billiard cues in the ground - anything that might faintly halt the march of the destroying winds across the face of the earth - seems to me worth trying."

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A weekly radio program, "Wilderness Adventures", modeled somewhat on our Forest Service Program "Uncle Sam's Forest Rangers", was inaugurated by the Canadian Forestry Association June 22, over a Canadian Nation-wide network.

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Following is the draft of a proposed bill to provide punishment for killing or assaulting officers or employees of the Forest Service, Department of Agriculture:

"Be it enacted by the Senate and House of Representatives of the UnitedStates ofAmerica in Congress assembled, that the provisions of the Act of May 18, 1934 (48 Stat. 780; U. S. Code, Title 18, Secs. 253 and 254), as amended by the Act of February 8, 1934(Public 431, 74th Congress), providing punishment for killing or assulting federal officers, be, and the same are hereby extended to include officers and employees of the Forest Service, U. S. Department of Agriculture."

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Governor Hugh L. White, as Chairman of the Mississippi Forestry Commission, and Mr. J. H. Thickens, Vice-President of the Masonite Corporation, have signed an agreement providing for cooperation between the two agencies in reforestation, forest education, forest management, distribution of forest nursery stock, and the establishment of school and other forests and forestry demonstration plots on approximately one million acres of forest lands adjacent to the Masonite Corporation plant at Laurel, Mississippi, according to a recent news release issued by the Mississippi State Forestry Commission. The budget and the work plan, as presented by State Forester Fred Merrill, have already been approved by both the Commission and the Corporation.

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During 1935, 140,724 acres were planted on the National Forests, about one-third of the total acreage planted during the previous years (1911-1935) 400,782 acres, and approximately one-fourth of the acreage planted to date, 541,506 acres.

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Following is an excerpt from letter from "Time" in regard to its incorrect statement about Shelterbelt plantations:

"May I express TIME'S sincere regrets for a deplorable copyreader's error? The first draft of our report read that 'about 20% have perished'. It was corrected to read 'about 80% have survived', but the two versions were telescoped at the printers'. We are very sorry that this happened, and shall watch for a good occasion to correct the point in print. We appreciate your authoritative correction, and your description of the Shelterbelt Project as it is being carried out. You may be sure that we shall be glad to refer to your letter when next we report on those activities."

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Judith Lowry, noted NBC Chicago character actress, who plays the part of Bess Robbins each Friday in the dramatic sketch "Uncle Sam's Forest Rangers" in the Farm and Home Hour, is most proud of the fact that she is a grandmother. She was born at Boscobel, Wisconsin, but calls Woodhull, Illinois, her home because she and her parents moved there when she was four.

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Records gathered by Region 5 from several of the CCC camps located on the National Forests in California show that 85 boys have obtained jobs upon completion of their enrollment, 48 in commercial work and 37 in conservation work in the National Forests. This is only a partial record and no doubt a great many more have profited by their training and experience in the corps.

Sixteen CCC boys obtained work in road construction as drivers of trucks, tractors, and other road building machinery for contractors. Twelve entered the skilled crafts. Three are with survey crews, three obtained clerical positions and the others are employed in various industries. Some of the boys who were taken by the Forest Service are employed in forest fire prevention and suppression work in such positions as lookout, patrolman and truck drivers, and others are handling road building machinery.

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Motor vehicles registered in 1935 numbered 26,221,050, an increase of 5 percent over 1934 registrations, according to the Bureau of Public Roads.

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The friends of Mr. Garver will be glad to know that he is making a remarkably rapid recovery. Fortunately, there was no skull fracture. Although his leg will have to be in a cast for several weeks, he is able to get around some with crutches, and it may be but a short time before he will be able to resume full duties on the office end of the Survey work in Washington.

AN "OLD TIMER" Passes On

By Mary R. Latimer, Washington

On Tuesday, July 16, 1936 Jack Lee, elevator operator in the Atlantic Building for more than thirty years, died in Gallinger Hospital. Incapacitated since January, when he fell on the icy pavement causing internal injuries, Mr. Lee waged a valiant effort against insurmountable odds.

On several occasions the Social Organization of the Forest Service had assisted Jack with the quiet dignity symbolic of their purpose but, in their final gesture every member of the Forest Service participated, to provide fitting burial for a kind soul who had been unable to make ample provision.

Jackson Solomon Lee has passed on to his reward. His many friends throughout the Service will miss his familiar greeting. He was buried with a beautiful tribute from the Forest Service personnel and we trust the peace and quiet of the forest is with him.

FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

U. S. F. S. [illegible]
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AUG 1 1936

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx [illegible] FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER Theodore Roosevelt

Vol. XX No. 17 Washington, D. C. August 17, 1936

FOREST AND FLOOD CONTROL

(Excerpts from an address by F. A. Silcox delivered by request at the joint meeting of the Ecological Society and the American Association for the Advancement of Science, at Rochester, N. Y., June 18, 1936)

Foresters and ecologists speak much the same language; both visualize a complex habitat in all its many relationships; neither claims that forest and other vegetative cover can prevent all floods or hold all silt at its source; yet both modestly agree that with adequate cover on watersheds, floods are less frequent and have lower crests than when nature's balance has been disturbed by the hand of man.

Indeed, I feel that I may safely go farther even than this; may assert with confidence that ecologists and foresters, having in mind the old adage that "an ounce of prevention is worth a pound of cure", believe that man's mighty engineering works alone cannot prevent death from stalking through the lowlands; that to be successful, flood and erosion control must not be confined to raging torrents of the lower Mississippi, but must start with raindrops and rivulets far from the haunts of man.

For there is where little waters rise; at their sources man may restore and maintain that vegetative cover which protects nature's own great reservoirs and settling basins. Flood control is, in the last analysis, a problem of conservation; to solve it man must lift up his eyes unto the hills. It is there that danger lies; from them, help must come.

In speaking to my subject I would not have you think that foresters are concerned with forests in that sense which a narrow interpretation of the word might seem to imply. They deal with logs and pulpwood, it is true. But in addition to commercial products, they also recognize the many other elements and factors which go to make up complex and composite manifestations of environment. The whole, rather than the part, is to them the forest.

Trees are one of these parts. But they are only one; not even, indeed, the only important one. Tree roots help hold soil in place, but roots of lesser vegetative growth - of woody shrubs, grasses and herbs - also act as soil binders and preventers of erosion. And their tops furnish cover and food for larger fauna which are another vital element of the forest, though small fauna, including the microscopic springtail, are also definitely in the picture. Soil, be it clay or sand, old or young, shallow or deep, rich or poor; and water above that soil and below; all these, and climate, are other parts of that biologic whole which is commonly called a forest. It is this whole, this environment, with which the forester deals. ***

Early America was far different from the country we now know. Indians had made but little use of agricultural possibilities. There were vast virgin forests; an abundance of wildlife. Herbaceous and shrubby vegetation was profuse. Mountain streams ran clear. Even the desert supported good stands of perennial grasses. Nature was employing every trick in her bag to promote absorption and infiltration of rains and melting snows. Run-off was retarded by trees, shrubs, grasses; by fallen leaves and other forest litter. Absorption was increased by a blanket of humus. There were marshes and swamps. Pockets and depressions that developed into ponds and lakes were natural reservoirs.

But the greatest reservoir of all was underground. The flow of water through the soil to the sea was checked by nature. When the spring rains and melting snows came, their run-off was slowed down and reduced. The normal flow of streams during dry seasons was sustained by seepage from porous soils and shaded springs that did not dry up. There was then an undisturbed environment on forest lands that still constitute almost one-third the land area of the continental United States.

Now conditions have changed. Man has disrupted nature's balance. Three fourths of all our forest lands - and four fifths of all the most valuable, or commercial forest lands - have long been in private ownership. From those lands has come 98 percent of all the forest products used by a young and virile nation for more than 200 years. On those lands, even in recent years, fires have burned annually an area greater than that of Connecticut, Massachusetts, New Hampshire, Virginia, Maryland, and West Virginia combined; ax and fire, together have despoiled or crippled an empire three quarters larger, even, than this. There has been no conscious effort on these lands to produce continuous harvests. Nature's environments have suffered. ***

Scientific investigations have built up an increasing mass of evidence about the influence the forest (in its broader sense) has on run-off and floods. Indeed, that information was in large part the basis for establishing in the Department of Agriculture a coordinated program of erosion-stream flow research, and erosion control. The portion of this program which has to do with agricultural lands and cultivated pastures is assigned to the Soil Conservation Service. That part which has to do with forest, range, and wild lands generally is assigned to the Forest Service, which for many years has been studying watershed conservation. ***

Forest fires in southern California's chaparral-covered mountains characteristically burn with great intensity; are controlled with difficulty. As a result, they may completely denude watersheds of several thousand acres. One such fire burned in Pickens Canyon during November 1933. Before being controlled it had gutted some 5,000 acres of steep mountain slopes previously covered with a luxuriant growth of brush. Just a few miles away was the well vegetated San Dimas watershed, within which the Forest Service was conducting intensive erosion-stream flow research.

During the last two and one half days of 1933, southern California experienced a general storm. In it, 12 inches of rain fell on both watersheds alike. On New Year's day of 1934 a flood swept out of the burned Pickens Canyon, sped through the town of La Crescenta, and destroyed 200 homes and 34 lives. The peak flow at the crest of the flood was 1,000 cubic feet per second per square mile of drainage. But the peak flow recorded from the nearby unburned San Dimas Canyon - just a few miles away and subject to the same storm - was only 50 cubic feet per second per square mile of drainage. And this flow was easily handled by the existing channel; there was neither flood nor damage from flood. ***

A comparison of more than 100 storms extending over a period of two years on Appalachian watersheds indicates that the peak in flood flows from deforested areas ranges from 10 to 20 times greater than from forested areas; in fact they have averaged 38 second feet per square mile from forested land, and 579 second feet per square mile from unforested land, an average ratio of 1 to 15. Moreover, streams are continuous from forested areas but often dry up between rains on the unforested land. ***

Reasons for these conditions are neither hidden nor mysterious though they lie, in large part, in the forest floor and the soil beneath. The normal forest floor is a mass of vegetative debris. This litter includes dead and decaying forest parts that have been shed during the course of years. Within it there live a horde of animal and vegetative forms which digest, consume, and eventually destroy the original material of which the floor is composed.

Activities of these organisms help create large quantities of soluble organic or humic materials. With the help of precipitation, they find their way into the mineral portion of the soil which, through physical and chemical changes, is then completely altered. In this process the soil is lightened; made more porous and absorbent. Ramifying roots of trees and other vegetation break it up into progressively finer particles. Forcing their way into cracks both large and small, these roots make of the soil a still looser and more porous mass. Then when plants die, dead roots decay, leaving an intricate network of open channels extending far below the surface.

These channels are supplemented by the action of insects, mollusks, worms, and other soil inhabiting fauna. Many of these are almost microscopic in size, but the 17 year locust, which has recently emerged in Washington, may be cited as an example of the larger ones. As a grub, this locust spends most of its life in the soil. Developing after years to maturity, and digging to the surface, it leaves holes up to three-eights of an inch in size. Actual counts in Rock Creek Park reveal as many as 20 of these holes, some of them 2 feet in depth, in a square foot of soil surface. With all soil inhabiting fauna and flora working undisturbed, a square foot of true forest soil will contain thousands of channels through which water may enter.

But if forest conditions are destroyed, the vast quantity of organic matter can no longer be returned annually to the soil. Wider fluctuations in soil temperature and moisture characterize a habitat no longer favorable for the original microflora and microfauna. More light and higher temperatures result in decomposition and oxidation of organic matter at such a rapid rate that the structure which under normal conditions requires decades to develop, is soon destroyed. And with this destruction a great deal of the soil's porosity is lost. This is evident in cultivation. For it has been found that normal forest soils will absorb water 20 to 50 times as fast as comparable field soils, and 10 or more times as rapidly as soils under grass pastures. ***

Though much of our flood damage is done by boulders and large debris, silt also presents a serious problem. It often forms a basis for agricultural wealth, but it also destroys this wealth. California's Imperial Valley is a case in point. It was formed by silt, but experts estimate that silt now brought down by the flooded Colorado requires an average annual expense of $2 per acre from Imperial Valley farmers who are forced each year to clear their irrigation channels and build up their levees. Nine percent of the reservoir capacity of the Elephant Butte dam in New Mexico is said to have been captured by erosion debris within 9 years after its completion. In 22 years the Zuni Reservoir in New Mexico has filled with erosion to over 70 percent of its capacity. Reservoir and other irrigation works of the Boise River in Idaho are now being heavily silted despite costly efforts to keep such accumulations down.

Yet "dams are good" says H. A. Morgan of the Tennessee Valley Authority. "But", he adds, "if we could raise the underground water table of the Tennessee Valley only six inches, that would mean 26,000,000 acre-feet of water - four times as much as the Norris reservoir will hold. Nature would do the storing. One hundred pounds of sand holds 25 pounds of water; 100 pounds of clay holds 50 pounds; but 100 pounds of humus holds 200 pounds of water!"

Dr. Morgan states the problem in a nutshell. It is obvious that measures for flood control must include dams and other down stream engineering structures. But what about little waters? It is they that make big rivers and floods, just as little fires unattended, unite to form conflagrations. ***

So in erosion and flood control up-stream engineering - as President Roosevelt has so aptly termed it - must function; and forest conservation in the problem of flood prevention. With little dams on little waters, and forest cover restored and maintained in hills where danger lies, there will be lesser volumes of water than now pile up in the lower reaches of our rivers. Without flood prevention at the sources, effective control below is impossible. And without that, man's life is a sorrier one, by far, than ever was intended it should be.

WHO READS GOVERNMENT REPORTS AND BULLETINS?

This question was asked us the other day by an officer of an association that is very friendly to the Forest Service. It came up in connection with the distribution of a number of new Government publications.

Frankly, we don't know the answer, and told him so. Then he proceeded to tell us a few things.

"You fellows have key-man lists of active individuals and agencies in California, and I suppose other States, too, but who is on them? I'll tell you. My guess is that they are largely made up of people who have been interested in conservation and forestry for years. They will work for you, sure, if the project is important enough, but you've been giving them the same old song and dance for so long that a lot of them are getting pretty well fed up on it. You can't expect the same individual or group to be pulling your chestnuts out of the fire all the time.

"There are about 126 million people in the United States, and I'll bet that not over 1/100 of 1 percent are actively interested and willing to work for forestry. And just what have you fellows ever done to try and interest the other 99 plus percent of our citizens in conservation? Of course you'll say you hold meetings and field trips, give lectures, etc., but who attends them? Mostly the same old bunch, and they usually spend a good part of their time wrangling over some little local problem. Did it ever occur to you to put some thought and effort into getting NEW people interested in forestry and willing to work for it?

"Now about those Government reports and bulletins - I have a whole shelf full of them that the Forest Service has sent me. First of all, they're unattractive - plain covers, long titles, and few and poor illustrations. You could lay one of them on a table with a bunch of books and magazines, and no one would ever touch it except the woman who dusts. Second, if a person was attracted by the title and subject, the size would scare him off. Why one of the reports I have in my collection is over three inches thick - as big as a couple of volumes of Anthony Adverse, and you know how many people bogged down trying to read that popular novel. Third, the stuff you fellows write is so darned technical that a good many of your own men can't understand it, let alone an average citizen, or else its flat and uninteresting - a kind of sing-song report style. You may get high blood pressure writing such stuff, but no one will ever die of heart failure reading it - though it may put 'em to sleep.

"But what's the use of my talking? You fellows will probably keep right on writing sagas of forestry until you retire. If some forest officer ever saw the light, and wrote a snappy bulletin of five or 10 pages - something that people might read - I expect you'd fire him." - Region 5

A TWENTY FOOT FROST

By O. M. Wood, Allegheny For. Expt. Sta.

Early in the morning of May 15, 1936, the temperature at the Lebanon Experimental Forest dropped to 27 degrees, after which it rose rapidly until at 2 p.m. a maximum of 71° was reached. For several days prior to the 15th the daily maximum temperature had been above 80° and once reached 91°. These high temperatures had caused the oak leaves to develop rapidly but they were still succulent enough to be severely injured by the low temperature of the 15th.

A few days later, as the uninjured leaves developed, it became apparent that there was a very definite upper limit to the zone of injury. All the leaves on small trees were killed whereas on slightly larger trees a few leaves at the top escaped.

With an extension rod the height of injury was measured in about 25 places on a 4-acre square plot. The lowest height of frost injury recorded was 18.5 feet above ground, the highest 21.5 feet, with an average of about 20 feet.

The maximum difference in elevation over the plot is about 6 feet, but the height of injury was about the same regardless of elevation.

A week after the frost the woods appeared to have been submerged for some time to a depth of about 20 feet. No permanent injury to the trees seems to have resulted, for new buds formed and were opening within three weeks after the freeze occurred.

The trees are now faced by another menace because the frost-killed leaves have increased the fire hazard which was already serious enough because of the prevailing drought.

FIRE

Continuation of hot, dry weather conditions is keeping the danger of forest fires critically high in many of the National Forest areas despite light showers in parts of the region affected by drought. The final summing up of Western weather conditions by the Weather Bureau confirms the opinion held by many Western Regions that the drought of 1936 has already exceeded in intensity the drought of 1934, which created such a bad fire record that season. Throughout the northern portions of Regions 1 and 9 lack of precipitation, extreme temperatures, and high winds make an almost unprecedented degree of fire danger.

The first fatalities from forest fires this season occurred the latter part of July when three men lost their lives and six others were seriously burned. The fire on which these casualties occurred started on July 25, near the mining town of Zortman in the isolated Little Rockies Section of the Lewis and Clark National Forest in Montana. It caught a party of fire fighters in its sweep through the parched forest and crowded nine men into a cave too small to protect all of them. Three men attempting to run through the flames to seek another place of safety were burned to death. Origin of the fire is held at the door of a careless smoker. The men who lost their lives when they gave up the shallow cave to the others were: Sawyer R. Brockunier, Lowell, Mass., employed by the Geological Survey; John Rolls, a miner, of Landusky, Mont.; a man named Baker, a surveyor of Havre, Montana. Badly burned was Otis Pewitt of Landusky. Reported less seriously burned were Edgar Palmer, Francis Williams, Cordis Miller, Art Tiedeman, all of Landusky, and Dr. M. N. Knechtel of the Geological Survey, Washington, D. C. These men had been employed by the Forest Service but were under the direct supervision of the Indian Service, which had called them to assist in quelling a hot spot along line handled by the Indian Service on Forest land.

Scarcely was this fire under control when another and larger fire broke out spreading to the forest and range from a burning building. By August 3 this fire had been flanked and headed toward the prairies by an army of 1,000 fire fighters including Forest Service and Indian Service men and many volunteer fighters. The fire line had reached a perimeter of 30 miles and 45,000 acres had been desolated.

In spite of the extreme hazards in this year of drought, the Forest Service has held fire losses in the National Forests of the western States well below those of the comparable drought year of 1934. Area burned in the six Western Regions up to August 1 is set at 59,049 acres; for the same period in 1934 losses totaled 98,668 acres. But another serious fire situation in the Central and Southeastern Regions also occurred early this year. Hundreds of fires occurring on newly acquired National Forest lands added greatly to the year's total of losses. All told, over 10,000 fires have already taken place within the National Forests this year (up to August 1). Over 250,000 acres have been burned; over $367,000 have been expended in the fire campaign. And the score on man-caused fires to date is 7,699 for 1936. Some of the fires have been incendiary, more have come from carelessness.

YE EDITOR DISCOVERS

Planting of 24 million trees by the Shelterbelt resulted in 81.2 percent survival up to July 1, 1936, after two years of very severe drought, Earle H. Clapp, Acting Chief of the U. S. Forest Service, and Alva Simpson, Associate Director of the Plains Shelterbelt Project told the Great Plains Drought Area Committee appointed by President Roosevelt July 22, at its meeting in Washington on July 31 with Morris L. Cooke, Chairman.

This planting amounted to 1281 miles of strips covering 32,000 acres, and involved 4,364 farms. The following benefits were cited:

Amelioration of local climate extending each side of plantations for a distance of fifteen to twenty-five times the height of the trees.
The reduction of wind movement and soil blowing.
Increase of soil moisture, thereby increasing crop production.
Reduction of hot, dry winds which often made the difference between success and failure in crops.
Protection for livestock.
Improved living conditions for an otherwise treeless community.

Special research by Forest Service scientists, the Committee was told, determined the most drought-resistant trees, located sites with most favorable soil and decided on best cultural methods and planting technique.

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On Thursday, July 30, the Joyce Kilmer Memorial Forest on the Nantahala National Forest was dedicated. The ceremonies, which were held at Poplar Cove, near Robbinsville, N. C., were sponsored by the Bozeman Bulger Post, Veterans of Foreign Wars, New York. Mr. Kircher made the address of welcome and Mr. E. A. Sherman the dedicatory address. Additional speakers were Paul A. Williams, Chairman of the Joyce Kilmer Memorial Committee; Charles McDonald Puckette, New York Times; and Father Kelly, spiritual advisor, Catholic Writer's Guild, New York. Lieut. John McCloy, U. S. Navy retired, unveiled the Memorial bronze plaque placed on a natural boulder, and Howard B. Waha sang "Minstrel Boy" and "Trees". President Roosevelt sent a personal message.

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Provision has been made for emergency livestock grazing, equal to 24,000 cow months in the National Forests of Region 9. Where sheep are to be grazed, the ratio will be five sheep months for one cow month. Permits will be issued for either class of stock. The minimum fees for range of similar character will be charged, i.e., seven cents per head, per month for cattle, and two cents per month for sheep.

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The cypress bark canker has now spread from the southern part of California to the Monterey peninsula. This canker, which is threatening the existence of the picturesque Monterey cypress, now is present in stands scattered over about two-thirds of the State. The extinction of this remarkable species which has come down to us as a relic of the Pleistocene period, is now a distinct possibility.

In only a few more years, this tree may pass, like the chestnut, from our forestry practices. Although the Monterey Cypress covers only a limited area and its wood has little value, the tree is widely planted in California and in some other sections of the country for ornamental and shelterbelt purposes. For shelterbelts where the tree will grow, it is a most valuable species.

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The correspondence regarding the transfer of various conservation agencies from Agriculture to Interior carried on last May between Secretary Ickes and Fred Brenckman, Washington representative of the National Grange, is published in the California Grange News for July.

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The photographic collection now embraces approximately 300,000 films. This has been increasing at a very rapid pace during the past few fiscal years as indicated by the number added to the collection.

In the fiscal year 1934, 12,120 negatives were added.
" " " " 1935, 14,282 " " "
" " " " 1936, 20,376 " " "

In addition to the number of negatives actually filed in the Washington Office there are of course a very large number that are never sent to Washington by the Field. Also there are a number which are too small to be placed in the collection and are returned to the author.

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Reference is made to Mr. Guthrie's article, "Forestry Exodus to Europe", in the last issue of the Bulletin. Dr. Hugh P. Baker and Prof. Nelson Brown find it impossible to attend the 2nd International Forestry Congress. However, Dr. Henry I. Baldwin, Forester of the Fox Research Forest, Hillsboro, N. H., will go, also the following lumbermen (under the Oberlaender Trust):

George F. Jewett, Manager, Potlatch Forests, Inc., Coeur d'Alene, Idaho.
A. G. T. Moore, Manager, Conservation Dept., Southern Pine Association.
Julian F. McGowin, Secy., W. T. Smith Lumber Company, Chapman, Alabama.

There will attend therefore, a total of 17 Americans, 5 of whom are lumbermen and 12 foresters.

SMITH RILEY

By John H. Hatton, Washington

The many friends of Smith Riley were grieved to learn of his death in Denver on August 2.

Smith Riley came into the Forest Service in the "Student Assistant" days, about 35 years ago. He had taken special forestry training at Biltmore under Dr. Schenck. In 1903 with a number of others, including Coert DuBois and the late R. E. Benedict, he was assigned to boundary examination work in the West. A number of National Forests (Forest Reserves) were established on Mr. Riley's reports and recommendations, at a time when there were difficult public situations and much opposition to the forestry movement. His conceptions were broad, his visions clear, and more than thirty years of subsequent National Forest history have proved them right and dependable.

At the time of the organization of the western inspection districts, having served as one of the general inspectors following the transfer of the Forest Reserves from the Department of the Interior to the Department of Agriculture on February 1, 1905, Mr. Riley was placed in charge of the important Rocky Mountain District. This was a difficult assignment in the pioneer years of the Service. When administrative districts were formed out of the inspection districts, Mr. Riley continued in charge of the Rocky Mountain District until 1919, when he was stricken with the illness which seventeen years later resulted in his death.

Mr. Riley's record was one of worthy accomplishment. He pioneered much of the early thought on the potentialities of wildlife and recreation as National Forest resources. He virtually became a self-made authority on these subjects. His interest in them was so large that Chief Forester H. S. Graves assigned him for a time to all the Western Regions to awaken interest and develop activity in these then new fields of forest conservation. A strenuous trip into the Jackson Hole country in the winter of 1918-19 to study the wildlife problems there was undoubtedly the cause of the disability which came upon him in the early summer of 1919.

Mr. Riley strongly advocated coordinate uses of the Forests. He foresaw that planning and cooperation, and a policy of live and let live, could be exemplified in National Forest administration.

Personally and officially, he was loved and respected by all who knew him. He loved children and they knew it instinctively. While physically disabled, his mentality remained keen. Many of his former forestry associates went often to him for his friendly counsel and inspiration.

Smith Riley never lost his interest in conservation nor his love of the West. He built himself a little bungalow in a part of Denver where from his window or doorstep he could see in panorama each day the great front range of the Rockies. How much he lived over the years, no one but he will ever know. But it must have been much, because he was always bright and cheerful and never complained.

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT *** THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY **** TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 18 Washington, D. C. August 31, 1936

"IMPRESSIONS" IN GERMANY

Assistant Chief C. E. Rachford sends from Germany some interesting "impressions" which he received during his visit in that country.

From the time the party was met by Dr. Kartzke, representative of the Oberleander Trust in Berlin, on Monday morning until the following Saturday night, it enjoyed the greatest courtesy and consideration. Delightful trips were planned both to show places of general interest and to give the opportunity to study forestry conditions in Germany.

They met the Reich General Forstmeister, Dr. H. C. von Keudall, and his chief of research, Dr. Aberts. German foresters accompanied the party on a tour which included a visit to the forest school at Eberswalde, several forests, and a very delightful stay of 24 hours on the estate of Baron von Keudall. This estate covers between 7,000 and 8,000 acres which is under the most intensive management. The Baron, while not a forester, is keenly interested in forestry and practices it on his own land. They were entertained here "charmingly and simply", and were shown over the estate by the Baron himself.

On the forest land here, as well as on public lands, efforts are being made by various methods to convert the pure pine forest into a mixed hardwood-pine forest. Fencing is necessary to exclude deer from areas on which hardwoods are planted. "The reason for all this is the belief" *** "that the single crop has so depleted the soil of its organic matter that it not only fails to produce a good quality and quantity of pine but subjects the area to diseases and insects." Having been convinced that a change is needed, the Germans are working for this change with "energy and determination". Not all foresters, of course, agree with this rather radical departure from old practices, but there was no difference of opinion among those who accompanied the visiting party. The party saw Douglas fir 40 feet high, grown from seed from our Pacific Northwest, growing with oak, beech, poplar, locust, and other species.

In the Grinmitz forest which they visited there were buffalo, deer, elk, and many kinds of birds, but all under semi-domesticated conditions. Germans are very proud of their game, but the final balance between "deer and trees has not been attained," except where deer have intentionally been given first place. And in these instances they have many more deer than the area will support, which means deer must be fed in winter.

The party had a glimpse of the German organization which corresponds to our CCC. As the organization is a continuing one, all structures are of permanent form and very good. Service in these "work-duty" units is required, not voluntary.

In Berlin the party saw the castle of the former Kaiser, passed through the famous Brandenburg Gate, and saw what is left of the once magnificent avenue "Unter der Linden", from which the beautiful trees have been removed during the recent widening of the avenue. A trip was made to the country estate of Minister Goering which is located in a forest near a beautiful lake. The party saw the hunting trophies of the former Kaiser, now housed in one of the palaces of the former ruling family. A visit was also made to Potsdam, of which Mr. Rachford says: "A detailed description is impossible, first because of my limited vocabulary and, second, because of a luncheon engagement to meet Colonel Lindbergh. * * * our forestry friends arranged our attendance at the luncheon through diplomatic channels."

On Sunday, July 26, the party left for Denmark.

THEN AND NOW

By David Lake, Lewis and Clark

Thirty Years Ago

It so happened that I was a "homesteader" in the precreation days of the "Forest Reserves" on the north side of the Snowy Mountains. Living on the only route of travel to the mountains, I became acquainted with the early personnel of the Reserves.

It was back in 1906 that the first ranger came by my place. He announced that he was a "U. S. Forest Ranger." From my conversation with him, I learned that he knew something about his work, but much more about almost everything else. However, he managed to stay on the job almost a year. My first impression of the Rangers.

Twenty Years Ago

About ten years after my first meeting with a Forest Ranger, I received an appointment as Forest Ranger myself. Proudly I reported for duty at the Muir Ranger Station, but my altruistic dreams were soon shattered. I was confronted with a dilapidated, abandoned ranch headquarters, which was the Muir Ranger Station and my future home. The house was in an advanced state of decay; it had neither doors nor windows and only part of a roof. The cattle had been using it for a flyshed for some time. The other buildings consisted of a barn ready to collapse, a wagon shed with an unsafe rotted roof, a roofless cabin and a root cellar with a caved-in roof.

My prancing charger turned out to be a team of plugs, one of which was very lame. The office equipment consisted of four pasteboard filing cases and a typewriter. I made a stand for the Oliver and a stool to sit on.

I had three months in which to get fixed for winter and had no funds for hiring labor. Fortunately my uniform consisted of a pair of "levis," and my former occupation as rancher had prepared my muscles for hard work. It proved necessary for me to be freighter, laborer, and local gossip-absorber.

Not knowing my district, I found the sheep by trailing them and then found them off their range; in fact, off the district. By going over my permits, I found that one unit should have had 550 cattle but it actually had 1,000 on it. The dry-farmers were just taking the country up, and everybody wanted to place stock on the Forest.

Today

My worn-out Muir Ranger Station has developed into a steam-heated, electrically lighted, well-furnished two-room office in Harlowton. The team of plugs have evoluted into a pair of V-8 Fords and the tumbled-down barn into a heated, brick garage. The "levis" have been replaced with the new uniform and my once hardened muscles have become soft. I have become a planner instead of a doer - and fortunately, I am adequately assisted by an assistant with several letters on his college degree. --R-1 Bulletin

WILDLIFE ACTIVITIES ON THE NATIONAL FORESTS

By John H. Hatton, Washington

A total of 83 men the past year have been employed on the National Forests in wildlife assignments. Sixty-nine of these men have important degrees from colleges or universities. The others have qualified for special work with wildlife through extended experience in the wildlife field. The increase in the assignment of men to fish and game work has been influenced largely by the increased activities in stream improvement, fish stocking, and other related work; also by assignments to special studies of individual species or to local wardenships on game refuges. Twenty-four were assigned to aquatic and fish work and 29 to specialized game studies or wardenships such as on the Pisgah Forest. The other 30 were given more general wildlife administrative assignments in regional offices or on forests or ranger districts. Seven of the ten National Forest Regions have each assigned a man to head up the wildlife work for the region as a whole. Three are at present handling these activities by placing men in special National Forest field assignments.

A conspicuous observation in connection with this work is the limited number of men with sufficient training and experience, for instance, to take over the biological and game planning work in an intensified way on important units having a diversity of species and problems. The Civil Service Commission has announced an open competitive examination for "District Refuge Administrator" for the Biological Survey for general administration and maintenance of eight primary migratory waterfowl refuges, three secondary migratory bird refuges, and an ultimate total of 78 easement refuges. The position is to be largely in connection with the Bureau's waterfowl conservation program. Why not develop an examination applicable to National Forest wildlife and related activities and cooperate with colleges or universities in outlining courses of studies that will prepare young men for this increasingly important field of work?

SILVER JUBILEE FOR THE WEEKS LAW

The Society for the Protection of New Hampshire Forests and the Forest Service will sponsor a Silver Jubilee in observance of the passage of the Weeks Law and the extension of the National Forest system in the East, at Mt. Washington Hotel, Bretton Woods, N. H., September 13-15. District Forester R. M. Evans will take part personally in the jubilee, and he and Mr. John E. Burch, Secretary of the National Forest Reservation Committee, will have places on the program at Sunday night's banquet, at which Mr. Pinchot will be toastmaster. Special invitations have been sent to men and organizations responsible for the enactment of the Weeks Law and to Supervisors of National Forests which have been established as a result of its passage, as well as to other Forest Officers in Regions 7, 8, and 9. It is expected also that the National Forest Reservation Commission will be represented at the meeting by Senator Keyes, and perhaps one or two other members of the Commission.

In addition to the banquet on Sunday night, the celebration will include "show-me" trips through the White Mountain National Forest on Monday and Tuesday, and on Monday night there will be a get-together discussion between officials of the Forest Service and those individuals interested in forestry in New Hampshire. It is expected that past and present Supervisors of the White Mountain National Forest will attend this meeting.

Regions 7, 8, and 9 will doubtless give some publicity to the Weeks Law and its benefits either through releases or over the radio around the time that the celebration is held in New England. The Washington Office expects to arrange for the appearance of two speakers on the National Farm and Home Hour on September 11, and hopes to work something into the Ranger Jim program on the Friday preceding the eleventh, calling attention to the Weeks Law Anniversary.

FOREST FIRE INSURANCE FOR NAVAL STORES TIMBER

The first steps have been taken in the development of a fire insurance plan for forest crops which promises to be of far-reaching importance to naval stores timber growers in Georgia. This plan of insurance is of interest to the entire Southeast, where fast-growing pine trees are steadily increasing the economic value of one of the region's most important industries.

On August 1, representatives of the Farm Credit Administration, the Federal Land Bank, the State Forester of Georgia, and the Atlanta Branch of the Hartford Fire Insurance Company held a conference with representatives of the Region 8 Office. At this meeting details were discussed of a proposed program under which money would be loaned on naval stores operations and be protected by insurance coverage on same. The Farm Credit Administration is desirous of aiding the naval stores timber growers in accordance with the law permitting the extension of the AAA benefits to this class as timber farmers and at the same time deems it advisable to have its loans guaranteed against loss by fire, so the Hartford Fire Insurance Company was requested to write insurance for naval stores trees. The Hartford Company agreed to do this, but since it is a pioneer field, the insurance company has been careful to obtain the advice of the United States Forest Service and the several State Forest Services. It is the plan to offer best rates on land, protected from fire under cooperative agreement between the land owners, the State, and Federal Government.

Insurance policies will be conservative, since they will pay losses only where fire completely destroys the productivity of the timber, from the naval stores standpoint, to the extent of 30 percent over the period of the loan, or where fires reduce the naval stores productivity of the timber more than 30 percent over a three-year period. Loans are not made on any trees under four inches in diameter. While it would appear that the insurance company is not likely to sustain any considerable loss as a result of damage payments, the plan will accomplish its purpose in permitting the landowner to obtain his loan at greatly reduced rates of interest and will give the bank the guarantee which it requires.

Forest fire insurance, if successfully carried through, will be of tremendous assistance in obtaining fire protection for private lands. Those who wish to secure these loans will find that it is an advantage to provide the fire protection recommended by Federal and State agencies, because failure to do this will result in increased premium costs for fire insurance, or in the refusal of loans. Under the present plans a timber grower who wishes to obtain a loan from the Farm Credit Administration will be obligated to state the steps he is taking to protect his timber from fire. He will also be required to furnish a statement from the local State representative, such as the District Forester or County Warden, concerning the adequacy of his protection efforts and giving suggestions for any additional steps or improvements necessary to provide adequate protection. This statement will be taken into account by the bank and by the insurance company in determining whether or not to make a loan and in determining the amount of premium to be paid.

If this program of fire insurance becomes successfully established, the Southern landowner will be relieved of one great hazard to a successful timber growing enterprise. Other benefits also promise to accrue from this program as the Farm Credit Administration, in addition to the requirements for fire control, will require good naval stores practice throughout the woods operation, and approved manufacturing practice in order to insure the best grades of gum and rosin practicable. --Region 8 News Release.

FIRST FOREST SERVICE RADIO

Nineteen years ago on a bleak November day the first Forest Service radio in the United States officially transmitted the first Forest Service message from the Baseline Ranger Station to an amateur station in Clifton, Arizona.

Almost overnight, Billy Warner, District Ranger, became famous along with Ray Potter, the amateur radio bug who installed the ancient transmitter and receiver.

Today this section of the Apache National Forest is now a part of the Crook National Forest, Arizona.

For an aerial - showing the ingenuity of these pioneers - they sacrificed a portion of barbed wire on a pasture fence, added many feet of clothesline wire and a considerable amount of bailing wire to make the aerial extend over one half a mile. Spanning the Blue River from an 800 foot bluff opposite the Ranger Station the wire was stretched about 3,000 feet to the cabin. Even today, this deserted station stands beneath the old lead-in wire that hangs 100 feet above the ground.

On this cold bleak November day a group of Forest Officers, including District Forester Paul G. Redington, Supervisor Fred Winn - now Supervisor of the Coronado - and Assistant Supervisor John Adams were ending up their forty mile trip from Clifton to the Ranger Station.

There were no roads and the trails were scarcely cow paths. When this inspection party reached the Baseline Ranger Station they expected to find a hard-working Ranger, eager for news of the outside world, who would probably listen by the hour to stories from the outside.

But this party received a distinct shock. They found Ranger Warner and Potter tinkering with a new-fangled contraption - a radio. Dots and dashes flashed back and forth. News came and went.

The District Forester was much impressed. So much impressed that he dictated a message to all Forest Districts in the United States and Washington, D. C.

Two weeks later, after the inspection party arrived back in Clifton, it was learned that the message had been received and sent by Western Union to all the addresses.

Today radios are used in National Forests throughout the nation and have proven invaluable in offering fast and inexpensive means of communication. --R-3 News Release

YE EDITOR DISCOVERS

The third plenary session of the World Power Conference will be held in Washington September 7-12. Some 50 nations have already signified that they will be represented at the Conference, and over 600 delegates will be present from those countries. It is expected that the meeting and the dinner, which will be held in the waiting room of the Union Station, will be attended by from 2,000 to 2,500 delegates and others. The theme of this conference is "The National Power Economy". Within the scope of this theme representatives of industry and of government from all the leading countries of the world will discuss in the sessions at Washington problems and policies relating to the organization, management, planning and control, not only of the strictly power industries but also of those industries which serve as the sources of power.

A very interesting array of exhibits has been arranged in various Government buildings. The Forest Service will have an exhibit in the Mayflower Hotel, the official headquarters of the Conference.

Preceding and following the Conference, there will be a series of technical study tours of six to ten days in length during which visits will be made to the leading industrial cities in this country for inspection of the best examples of modern technical and industrial practice. At the close of each tour there will be a series of "round-table" conferences. There will also be a trip to Canada, followed by a transcontinental trip taking in many points of interest in the Far West.

Mr. Silcox is a member of the National Committee and Chief Engineer Norcross is a member of the Executive Committee and also Chairman of the Tours and Travel Committee.

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In the last few years the Department has been slowly transferring its experiment activities from the Arlington Farm, just across the Potomac from Washington, to Beltsville, Maryland, where a national Agricultural Research Center is being developed. At this center some 15,000 acres have been purchased and buildings have been erected for the use of various Bureaus of the Department. Recently lands have been acquired which are suitable for the Biological Survey and the Forest Service. Each of these agencies has now about 2,000 acres assigned to them for investigative work.

An ERA program is projected to provide buildings for the use of both the Forest Service and the Biological Survey. A small crew of ERA men are now working on the area building firelines, woods roads, clearing of slash, and in other ways putting the area into shape for investigative work. The job of erecting the buildings will be handled by the Research Center under the direction of Mr. H. A. Nelson, Department representative in charge of the area. Plans for the buildings were prepared by George Nichols, who has been for some time associated with the Department in developing buildings for rural resettlement, etc. He is known among architects for designing Rockefeller Center in New York City.

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The 1189-page "Yearbook of Agriculture: 1936," just off the press, differs both in typography and contents from previous yearbooks. Agricultural statistics, which used to require half of the yearbook, are cut to 32 pages, leaving to a separate volume the usual detailed tables. The main section of the book, "Better Plants and Animals", gives the results of a comprehensive survey of superior plant and animal germ plasm. It presents for each major crop and livestock group a genetic history and a critical survey of superior strains, a discussion of genetic problems, and a catalogue of what seems to be superior germ plasm.

Secretary Wallace, whose special interest in plant breeding prompted him in 1933 to appoint a genetics committee in the Department with the present volume in mind, says in a foreword that "The Yearbook shows how much we know and also how much more we should know but do not as yet . . . I trust the day will come," the Secretary concludes, "when humanity will take as great an interest in the creation of superior forms of life as it has taken in past years in the perfection of superior forms of machinery. In the long run superior life forms may prove to have a greater profit for mankind than machinery."

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Decision has been reached to issue a supplemental Area Table as of September 30, 1936. This edition will be an independent compilation and will include all of the area changes which take place between the dates of June 30, 1936 and October 1, 1936.

This is deemed advisable because a number of National Forests in the East have been created since June 30, and the up-to-date area figures will be useful during the balance of the fiscal year.

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A branch of the international society "The Men of the Trees" is being established in New York City. The Men of The Trees is a society of tree lovers who are working to create a universal tree sense and encourage all to plant, protect, and love trees everywhere. Mr. James H. Heron, who is organizing the New York branch has pledged his support to the Forest Service program.

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In one of his recent articles, Columnist Heywood Broun, speaking of the late Lincoln Steffens, says: ". . . . in his youth and middle period he had neither the will nor the capacity to go ahead and see what made masses of men move and tick. He was too much concerned with individuals to understand people. He was a tree fancier rather than a forester.

(Underscoring is ours)

FIRE DANGER MEASUREMENT

The locations of ten new inflammability stations in central and eastern Montana were selected by the seven "eastern" Region 1 Supervisors of the Squaw Creek Fire Control conference held on the Gallatin National Forest. H. T. Gisborne of the Northern Rocky Mountain Experiment Station, attended this conference and then visited 8 of the 10 new sites, selecting locations for the instruments. All but two of the new stations are above 5000 feet elevation, yet close to the lower timber line.

A tour of the central and eastern Montana forests brings out one factor that has not always been considered in our past justifications of fire control. This might be called the "Public Interest" value of the forest growth, and is, in some ways, independent of the timber, scenic, recreational, and water control values. This "Public Interest" value is illustrated by two conditions that exist in eastern Montana but not in the western part of the State, nor in north Idaho. The first is the way the rural population voluntarily swarms out to fight fire. Very often 25 to more than 100 ranchers will appear at a fire, of their own accord, bringing their own tools and staying with the fire until it is out. Very often they discover fires, put them out, and then report to the Ranger when they see him.

The second condition is illustrated by the statement made by several Forest Officers, "See that canyon ahead of us? Well, you let a fire sweep up through there and the townspeople (Bozeman, Livingston, Billings, and Great Falls especially) will use political methods to get our scalps. And they won't stop with the Ranger. They'll go after the Assistant Supervisor, the Supervisor, or higher".

Such a public interest is the attitude we think our Information Service should create. It is already there in eastern Montana, and it may be a bigger factor in the justification of fire control expenses than any of the physical factors specified by the Washington Conference of 1930. It is most certainly true that timber values alone are not the principal reason for fire control in the scenic, recreational, and highly utilized water source areas of central and eastern Montana. When one area of 55,000 acres of highly-productive, cultivated land depends entirely on the water from the adjacent forest, and when in addition the dude ranches surrounding this area use the forests for 17,000 dude days annually, considerable fire control is justifiable even if the forest growth is useless for lumber. Many of those dudes are Easterners, often politically powerful themselves, or with politically powerful friends.

Under such conditions it is not surprising that both the local Forest Officers and the local public are interested in measuring fire danger. The measurements should help to show when and where the fire control effort is needed.

With 10 new weather and inflammability stations about to be constructed, many of them located in or near carefully landscaped ranger station grounds, there was need of plans for fences and instrument locations suitable both esthetically and scientifically. The Regional Office approved the policy of making all inflammability stations fit into our "showmanship" as evidence of the character of another phase of our work. The regional landscape architect is now preparing several sets of plans for this purpose. The new stations will be built to the new standards and the 65 old stations in western Region 1 will be improved as fast as funds and labor permit. Forest Research Monthly Report, May 1936.

SHOWBOAT ACCOMPLISHMENTS

The Forest Service Showboat "Arizona" has become a familiar sight on the highways and by-ways of Arizona and southern New Mexico.

Just a year ago it steamed out of Albuquerque on its first tour of R-3, and today as "Skipper" George Russell checked in at the Regional Office the speedometer showed 30,000 miles. During the year March 15, 1935 to March 15, 1936 a total of 29,450 people have been contacted in 202 showings which were principally at the CCC Camps with incidental showings on open dates at schools, transient camps, community centers, and meetings of Rotary Clubs, Kiwanis Clubs, and Game Protective Associations. --Region 3 "Forest Pioneer".

IMPERSONATION OF FOREST OFFICER

A man using the name A. Y. Baker has been impersonating a Forest Officer and using Form 877 to purchase equipment. He has been operating in the South for a month or more and instructs the merchants to send the invoices to Washington for payment. It is understood that this man was employed by the Forest Service under another name several years ago and undoubtedly obtained a book of Form 877 at that time. If Forest Officers hear of a man in their territory operating in this way, it is requested that they immediately get in touch with the nearest office of the Federal Bureau of Investigation.

MILLIONS OF POSTS NEEDED TO REPAIR MINNESOTA FENCES

About 470,000 miles of fences are in use on the 185,000 Minnesota farms, or an average of about two and a half miles per farm. Construction of these fences necessitated the use of nearly 150 million fence posts. Annual maintenance requires the cutting and placing of about 11 million posts each year. These facts concerning one of the important local forest products in Minnesota were obtained in connection with the Forest Survey conducted by the Lake States Forest Experiment Station in 1934.

Only 5 percent of the posts now used in Minnesota are made of steel or cement; 95 percent are wooden posts.

Less than half of the posts cut each year in Minnesota are taken from trees which would be merchantable for lumber, ties, poles or other valuable products. One-sixth are cut from dead or cull trees; another 15 percent from tops, limbs or other unused parts of merchantable trees after the poles or ties have been removed. Nearly one-quarter are cut from small trees below 5 inches diameter. Only 44 percent come from sound merchantable trees.

To supply 11 million fence posts, the equivalent of nearly 230,000 cords of wood must be cut each year. This is about one-third of the volume of wood cut for lumber in recent years, but of course is much smaller and poorer material than that used by sawmills.

Farm fences throughout the State are in a poor state of repair. During the depression replacements have not been made except where absolutely necessary. Short-lived inferior woods have been used in many recently constructed fences because they could be obtained without cost. With improving farm conditions, there will doubtless be extensive renewal of broken-down fences and annual requirements may considerably exceed the normal 11 million for a number of years.--Technical Note, Lake States For. Expt. Sta.

HOW WE HAPPENED TO BE CALLED "RANGERS"

Region 8 is responsible for the following in regard to the origin of the term "Ranger."

It seems that the English borrowed the name from the French, the term being first used in England in 1445 when rangers and foresters were mentioned on the rolls of Parliament.

The word was first used in the United States in 1742 in Georgia. The provisions of that Colony in that year stated that "for the defense of the Colony it is necessary to have . . rangers who can ride the woods." In 1796 Virginia sent rangers out against the Cherokee Indians.--R-3 "Forest Pioneer"

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

Vol. XX No. 19 Washington, D. C. September 14, 1936

SUPPLEMENTARY SUPPLICATIONS

By M. C. Merrill, Division of Publications

I was naturally much interested in the supplication "A Plea and a Prayer" by John D. Guthrie in the Service Bulletin of July 20. That article set me to pleading and praying-for the opportunity of commenting on the subject - and my petition was courteously granted on the ground that I was formerly a member of the happy Forest Service family and in reputedly good standing as far as the Editor knew offhand.

In these days of abounding sophistication it is refreshing to find one so innocently unsuspecting as the author of the statement that: "It is so attractive a book that one would never suspect its being a Government publication." If Brother Guthrie would take the time to take a ride from the forests to the big printing city called the Government Printing Office and look around in the new parks thereabouts, he'd find a lot more of the modernistically babbling brooks like "Little Waters." When he wrote that sentence I wonder if he had seen (to mention only a few of a great many):

Norris Dam.
Rural Electrification News.
Youth, Finding Jobs.
Safeguarding Democracy Through Adult Civic Education.
Crater Lake National Park.
Significant Programs of High-School Parent-Teacher Associations.
A Visit to the World's Greatest Printing Plant.
Program, General Bulletin, and Tours Bulletin of the Third World Power Conference.
Soil, The Nation's Basic Heritage.

Of the last-named publication Maury Maverick, in The New Republic for August 12, 1936, said:

> "Soil: The Nation's Basic Heritage, is not a book but a shining pamphlet fifty-nine pages long, and a streamlined beauty. It's done by your Government Printing Office; illustrations in photographic black and white run to the full edge; typography is grand, artistic, and with plenty of white space. Whereas 'Little Waters' was IT, this is the printers', the illustrators', the concise writers' dream. Here knowledge fairly calls like a siren. Altogether, there are not more than 5,000 words - from 150 to 200 on the lefthand pages, appropriately illustrated on the right. There are twenty-four full-page illustrations, each covering a scene; three full pages with several illustrations; seven charts; and one map of the Tennessee Valley that will knock your eye out."

Now what about the Department of Agriculture publications? Are they so devoid of attractiveness that they are appropriate subjects for pleas, prayers, and lamentations? Before Brother Guthrie comes to that conclusion may I suggest that he examine the publications in the various series very prayerfully. If he will do so with an open mind methinks he will there find many that satisfy his artistic eye. Perhaps I am unduly biased in their favor, and I may therefore be dead wrong, but I have fondly believed that, considering their content, their purpose, and the readers for whom they are intended, a vast number of our Farmers' Bulletins, Leaflets, Forest Service Map Folders, Technical Bulletins, Miscellaneous Publications, and Circulars, to say nothing of the Consumers' Guide, Soil Conservation, Extension Service Review, Journal of Agricultural Research, and the Yearbook for 1936 look mighty good to even a critical eye. I therefore suggest that John D's pleas and prayers might be answered by himself if he would observe the admonition of the good old Book to "seek and ye shall find." It is hard to believe that pulchritude is a missing link never found in the chain of publications issuing forth from the presses of the largest printing plant in the world.

It of course is recognized that there is room for improvement in the appearance of our publications. With plenty of printing funds better paper could be used, more illustrations provided, color printing employed more generously, and more time and money spent on artistic presentation. But considering the immense volume issued with limited funds and the urgent requirement for speedy publication in many cases, the Government publications appear to me to be remarkably creditable. Surely as a class they don't merit being cast into the outer darkness of "weeping and wailing and gnashing of teeth."

John D. asks whether the readability of the annual report of the Chief of the Forest Service would not be enhanced 1000 percent if it were dressed up a la "Little Waters." He should read Section 1412 of the Department Regulations in which the prohibition based on an Executive Order is given that annual reports cannot carry illustrations. Again it is a question of expense.

And right here it may be well to suggest the danger of making our Department publications too jazzy and too expensive. If we want to jeopardize our printing funds and thereby render much of our work ineffective, just let the idea germinate out yonder around the grass roots that the Department is woefully extravagant and wasteful of its funds for publication. Then when the crop of criticism is harvested and shipped in Congressional containers the job is done.

Although this is a jazzy age, there is still appreciation for the good old-fashioned classics and the grand old masterpieces of the days gone by. And while the dressed up, jazzy publications like the jazzy music have their appreciative audiences, the staid, simple, dignified, thought-stirring ones also have their function. The fundamental research papers and bulletins are written primarily for the specialists and others interested and informed in the field of knowledge under consideration. The important thing about them is the information they carry. It should be presented clearly, directly, logically, and as briefly as possible. I agree heartily with Guthrie's plea to the authors for condensation and clarity. That process would improve many a scientific contribution. And I also say "Amen" to his prayer that more attention be paid to the question: "For whom are we writing?"

In all these considerations good editorial assistance to authors is a worth-while asset both to them and the readers. And if the editorial job is well done the manuscript suffers no devitalizing process, as indicated by John D., but on the contrary it is sympathetically renovated and regenerated and made to look and feel so respectable that it can enter even the most aristocratic book shelf without blushing. Some authors write so well that their manuscripts don't require much attention at the editorial beauty shops. Others write like --- well, perhaps this invocation is long enough. Amen.

FORESTRY AS ADVERTISED BY THE PRODUCER

By H. D. Cochran, R. 2

The cutting of timber on the National Forests of the Black Hills has been serving economic and silvicultural purposes for a period of 38 years, with a degree of intensiveness that is apparently not matched on any area of comparable size in the United States. Mining, stock raising, and other industries in the Hills have fluctuated to a greater or less degree during that period, but the harvesting of timber has remained on an even keel and the cumulative result has been a notable contribution, not only to economics and silviculture but also to general social standards. The best evidence of this may be obtained by visiting communities in the Black Hills that have been sustained by a stabilized timber industry.

Evidence of another kind, however, has floated out of the Black Hills in the form of a full page advertisement in an anniversary edition of the Rapid City Daily Journal, sponsored by the Warren-Lamb Lumber Company. This advertisement furnishes the information that the Warren-Lamb Lumber Company, which was founded in 1914, purchases on an average of $35,000 worth of stumpage from the Black Hills region and cuts this timber in accordance with the standards of the Forest Service. This industry provides labor for 225 men in Rapid City and 130 men in the woods, and includes the operation of a 40-mile railroad. A claim is made furthermore that the annual payment in cash for payrolls and other expenses in the region of this operation amounts to over $500,000 each year, of which $55,000 is spent for hay, oats, and other supplies purchased in local communities. The probable cut for the current year is 18 million feet, which it is estimated will produce the following:

600 carloads of lumber
150 carloads of boxes
150 carloads of grain doors
180 carloads of wood fuel
200 carloads of sawdust
105 carloads of moulding
60 carloads of furniture parts, all manufactured from ponderosa pine.

The distribution of these products reaches into 15 States.

Lah - de - da!

By Ivan H. Sims, Washington

Ah me! Forestry is now definitely out of the woods. No longer are the "Filson", the "Stetson" and caulked boots the badges of a young and virile (not to say rowdy) profession. First it was knickerbreeches and now, may the Red Gods preserve us, it's "tails and white ties." We quote a portion of a letter from The Principal Secretary of the President of the Second International Forestry Congress at Budapest, Hungary, inviting delegates to receptions by H.S.H. the Regent of Hungary, and the Minister of Agriculture.

"We beg to inform you that the gentlemen who might be received by H.S.H. the Regent should wear morning coats and silk hats. His Excellency the Minister of Agriculture will receive members of the Congress Saturday, the 12th of September, in the evening and the members of the Congress who will take part in this reception are requested to wear evening dress."

Any earth tremors occurring about the middle of September will probably be traceable to Paul Bunyan turning over in his grave when the Foresters, Raphael Zon, Chris Rachford and other members of the Forest Service delegation trot out in those morning coats, evening dress, and top hats. Let's hope no weird and wonderful new ideas on "office clothes" result from this excursion.

MURDER OF EBEN B. BETHEL

On June 2, 1936, Eben B. Bethel, Forest Guard, was killed on a lonely country road, used very rarely except by Forest Officers in suppressing fires, near Pilot Mountain, 8 miles northeast of Waldron, Arkansas. The body was found about 8 p.m. by two CCC enrollees who had been left by Bethel to mop up a bee tree fire which had been started on Sunday, May 31.

Abell Allen, who was responsible for the bee tree fire and who was fearful that this offense would land him in the penitentiary where he had recently spent some time, later confessed to killing Bethel because he felt that Bethel suspected him of setting the fire.

Early on June 2, Bethel had gone out to investigate the fire and, after leaving two enrollees to mop up, apparently tracked a horse which had been "shod in front" to a sawmill operated by one Mr. Canada. The operator was not at home, but Bethel interviewed the hired man, Abell Allen, a comparative stranger in the country, who was plowing. Abell later told investigators that when questioned by Bethel, he had told Bethel that the mill owner had a horse "shod in front". In his confession, Allen also said that Bethel had told him that he (Bethel) had an idea who had set the fire at the bee tree and that somebody was "liable to go to the penitentiary".

After Bethel left, Allen went on with his plowing until about 11 o'clock, then after lunch he took Mr. Canada's gun and went up the road until he found Bethel's pick-up. According to his confession, Allen went down the road about a quarter of a mile and made a barricade of brush across the road, then went back about 40 steps and sat down under a pine tree to wait for Bethel, who did not come along until about 4:30. When Bethel reached the barricade, he stopped his car and got out to remove the brush. As he was getting back into the car, Allen shot him twice. Bethel fell, so Allen said, and Allen then half-circled him and when Bethel attempted to rise, shot him again, this time fatally.

Forest Service officers immediately took up the case. They were greatly aided by Paul Lacour, Department of Justice agent, and by the Arkansas State Rangers, the Sheriff, and the Deputy Prosecuting Attorney. Within four days Allen had been arrested and had confessed.

Eben Bethel had worked for the Forest Service in various capacities for about 13 years, was a good man, and favorably known in the community.

MINING VS. RECREATION

By W. N. Streeter, Lewis and Clark

There was extensive mining on the Belt Ranger District as early as 1870. Jerico, an abandoned and almost lost site at present, was the first center of activity. During its era of prosperity, the Belt Creek drainage was accessible only from the south over the heads of the Judith and Smith Rivers via very poor wagon roads. Neihart, which was established later was at its peak from about 1889 to 1903 and during that period had a population of about 3,000.

The Great Northern Railway Company extended its line to Neihart in 1902 and a wagon road over which to haul supplies was constructed up Belt Creek by the railway company. In 1914 the Montana Power Company constructed a service power line through Neihart.

Mining was lively until about 1924 and by 1931 the last large mine, the Silver Dyke, closed down. Since 1931 only a few small mines have operated. Neihart, the once flourishing center of mining activities, has dwindled to a village of about 160 people dependent upon what mining is left and on the tourist traffic over the Y.G.B. line, Park-to-Park highway, which transects the district by way of Belt Creek.

Since the completion of the highway, the recreational population of the area during spring, summer, and fall far exceeds the mining population.

Approximately 20 miles of Belt Creek is unfit for the existence of fish, because of the dumping of mine tailings into the stream. Due to the narrowness of the canyon and steepness of the slopes, construction of dams to keep the tailings out of the creek would make the mining operations unprofitable.

A once large mining industry has decreased to an existence for a handful of people, while the recreational resources of the area, little thought of in early days, have become the greatest asset. How long mining will be able to resist the ever-increasing recreational demand for this area and other similar areas is not known. - R. 1 Bulletin

CCC EDUCATIONAL ACTIVITIES REGION 2

By H. C. Hilton, R-2

Last fall (1935) the men in charge of the ECW work on the Black Hills and Harney Forests received teacher training. These men in turn held training meetings of the Superintendents and Foremen in which they were instructed in the four step procedure and in simple lesson plans.

During the winter, Professor J. B. Yingling and Walter H. Cooper of the Colorado State Vocational Training Board conducted conferences in teacher training for Superintendents and Foremen of all the technical agencies in Colorado. This work was done under the regular educational agencies, but this office was responsible for the development of the idea and gave it all the support possible.

Some work was done in Wyoming which has culminated in a two weeks' training course at the University of Wyoming for Camp Advisors, who will also do some analysis and study work at our Mullen Creek F-36 camp on the Medicine Bow Forest. Dr. MacNeel of the University of Wyoming has been particularly cooperative in developing study courses and in training work connected with the CCC.

Colorado University has given college work to men stationed at or near Boulder for the last two years.

Lee P. Brown is visiting the CCC camps of Region 2 this summer and is carrying on additional training in the four step procedure and in lesson planning.

WILDLIFE ACTIVITIES ON THE NATIONAL FORESTS

By John H. Hatton, Washington

Perhaps one of the most valued current field records of wildlife is the annual estimates submitted by forests, regions, and States. These estimates are gradually improving in accuracy and furnish increasingly important data on which to build progressive wildlife management plans. The total estimated number of antelope for 1935 is 16,598 as against 15,013 in 1934; of black and brown bear, 55,079 as against 55,122; of grizzly bear, 5,269 as against 5,172 deer, 1,291,329 as against 1,038,416; elk, 117,916 as against 120,638 moose, 6,186 as against 8,127; mountain goats, 18,511 as against 17,962; and mountain sheep, 12,924 in 1935 as against 13,145 in 1934.

Figures on fur-bearing animals on the National Forests show badger, 52,424; beaver, 123,450; fox, 151,507; marten, 83,591; mink, 134,952; muskrat, 207,188; otter, 6,951, the larger numbers of otter being in Regions 1, 6, 8, and 10; raccoon, 122,449; skunk, 265,702; and weasel, 291,898. All the species mentioned show increases over 1934 excepting beaver and otter.

Under game law enforcement the tabulations show 1,581 licenses issued by Forest Officers and 63,983 licenses examined by Forest Officers. The prevention of game violations through the examination of licenses and the opportunity of the Forest Rangers to make local contacts and furnish information to the public is considered one of the most important phases of law enforcement and observance.

TYPE MAPPING PROJECT FOR SOUTHERN FOREST LANDS

Region 8 is undertaking a project of timber type mapping on private forest lands in the South. This project which promises to run into many millions of acres before it is finished, was inaugurated through a need for accurate fire control maps in protecting private forest lands. CCC enrollees will be used in obtaining the data for these maps.

The State of Georgia already has type maps covering eight million acres of private forest lands, the data for which have been compiled by these type mapping crews. Florida is making a start, type mapping 225,000 acres per month, and expects to double this figure in a short time. Texas, North Carolina, and South Carolina each have started this work and the other States in the Region are rapidly organizing type mapping crews and it is expected that ultimately all State and private forest lands in the Region will be covered by this project.

The data to be obtained include an accurate map showing the roads, railroads, streams, fire breaks, and topographic features. It will also include a type map showing twelve to fifteen easily recognized forest types, together with information on cultivated lands, savannas, marshes, beaches, and various fire hazards, such as settlements, dwellings, etc.

The organization of each State provides for an experienced timber cruiser to head up the work. He will have an assistant in the central office and sufficient draftsmen to properly assemble the maps submitted by the camps. Engineers will be employed to direct the work in the several camps and to make accurate base line surveys. Foresters will be employed to direct the crews of enrollees in cruising the forest land between the base lines or otherwise obtaining the information called for. Enrollees in crews of two will run strip crews at intervals of one-fourth to one-half miles apart, obtaining the bulk of the information called for in the type map. Enrollees trained as draftsmen will assemble the data from the several crews for the camp map as the work progresses. - Region 8 News Release.

YE EDITOR DISCOVERS

The activities of the Forest Service in the WPA program are featured in the Works Progress Administration Report for July, 1936.

According to a chart in this report, the Forest Service stands seventh in the percentage of total persons employed from relief rolls by selected agencies participating in the Works Program. Only six agencies, of which the Works Progress Administration is one, had a greater percentage of total persons employed from relief rolls by agencies participating in the program. The Forest Service percentage was 85 and the highest, WPA, was 95. Twelve other agencies were below the Forest Service, the percentages ranging from 20 to 82.

Another chart shows that the Forest Service reached its peak of employment in May 1936 with 20,000 persons. In October, 1935, however, only two months after the program was started, the Forest Service reached its 1935 peak, employing 19,545, and was one of the leaders among all participating agencies in speed of getting men on the job.

Because the Forest Service required persons with technical education and training for the examination and appraisal of lands, the WPA granted an exemption from the 90 percent requirement and from the monthly earning schedules for 813 Civil Service employees who had worked for the Service previously, 335 timberland examiners and appraisers, and 46 surveyors. In other capacities the 90-10 percent rule was observed. Operations on about 95 percent of the jobs contemplated by the Forest Service under the allocation for work projects have been completed.

Net allocations to the Forest Service of Works Program funds through June 30, 1936, totaled $26,272,125, of which $14,574,625 was for works projects ($500,000 of this was transferred to the land acquisition program), $11,125,000 for land acquisition, and $572,500 were provided for administrative expenses. Of the total of $14,574,625 allocated for works projects, $11,328,945 was set aside for National Forest improvements, $931,597 for the expansion of the Research program, $1,814,083 provided for forestry work in the Plains States, and $500,000 transferred to the land acquisition program.

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The work sheets received from naval stores operators in connection with the Naval Stores Conservation Program, which is being handled by Region 8 and the office of State and Private Forestry, indicate a total of 921 producers cooperating under this program. They reported 78,600,000 cups in operation on July 1. Approximately 18 percent of these cups were removed from operation on August 1, or about 11 percent of the total production.

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The New York Times very favorably presented in its rotogravure section August 30 a two page layout on the Shelterbelt Project.

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Robert Fechner, Director of Emergency Conservation Work, has made public the results of a survey conducted by the Department of Labor to determine the age distribution of 238,846 young men between the ages of seventeen and twenty-eight who were selected for enrollment in the CCC between October 1, 1935, and July 31, 1936. This survey, covering the selection of all young men enrolled in the CCC since the minimum age limit was set at seventeen years, showed that more than one-half of the men came from the seventeen- and eighteen-year age groups. The survey also disclosed that 75 percent of the 238,846 men selected were in the seventeen-, eighteen-, nineteen-, and twenty-year age brackets. Not more than 17.22 percent of the applicants for enrollment were above twenty-one years of age when selected.

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The office of State and Private Forestry cooperated with the Editor of the Forestry News Digest, published by the American Tree Association, for a special issue devoted to private forestry. It is understood that the Editor received so much material for this special issue that it will have to be printed in two installments; one the first part of September and the other in November. The first issue contains articles by Chief Forester Silcox and other members of the Forest Service and officials of various lumbermen's associations. The issue will be widely distributed. Each Forest Officer will receive a copy.

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Associate Forester E. H. Clapp, on July 25, presented before the Connecticut Engineering Congress a paper on "Reforestation as a Principal Factor in Soil Conservation and Flood Control". This paper has received such favorable notice from Engineers and others that it has been mimeographed. Copies of this are available in the Washington Office for any Forest Officer who wishes one.

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Stephen N. Wyckoff has been appointed Director of the Northern Rocky Mountain Forest and Range Experiment Station. For thirteen years Mr. Wyckoff has been in charge of the Western Office of Blister Rust Control at Spokane, Washington.

He received his original appointment in the Department of Agriculture in 1919 and has had a varied experience in research, administrative and technical positions. He is a graduate of the University of California.

Mr. Wyckoff will assume his new duties October 1.

MOVING IN A CIRCLE

Processionary Caterpillars feed upon pine needles. They move through the trees in a long procession, one leading and the others following - each with his eyes half-closed and his head snugly fitted against the rear extremity of his predecessor.

Jean-Henri Fabre, the great French naturalist, after patiently experimenting with a group of these caterpillars, finally enticed them to the rim of a large flower-pot where he succeeded in getting the first one connected up with the last one, thus forming a complete circle which started moving around in a procession which had neither beginning nor end.

The naturalist expected that after a while they would catch on to the joke - get tired of their useless march and start off in some new direction.

But not so - - - - - -

Through sheer force of habit, the living, creeping circle kept moving around the rim of the pot - around and around, keeping the same relentless pace for seven days and seven nights - and would doubtless have continued longer had it not been for sheer exhaustion and ultimate starvation.

Incidentally, an ample supply of food was close at hand, and plainly visible, but it was outside the range of the circle so they continued about the beaten path.

They were following instinct - habit - custom - tradition - precedent - past experience - "standard practice" - or whatever you may choose to call it, but they were following it blindly.

They mistook activity for accomplishment. They meant well - but they got no place. - General Motors "Thought Starter Series"

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

Vol. XX No. 20 Washington, D. C. September 28, 1936

IN THE SCANDINAVIAN COUNTRIES

On July 26 the Chief Forester and Mr. Rachford left Berlin for Denmark, and for the next 3½ weeks traveled in Denmark, Norway, Sweden, and Finland, seeing the countries not only as foresters but from the personal standpoint of guests who enjoyed frequently the delightful hospitality of the people whom they met.

Denmark with its well cultivated farms, neat houses usually painted white with red tile roofs was a delight, except where some enterprising salesman had introduced Armco galvanized roofs. In fact, the whole atmosphere of country life reflects the determination to maintain comfortable homes, and all the Scandinavian towns, streets, and homes radiate cleanness.

Mr. Rachford writes that: "Insofar as conclusions on European forestry, so far as we have seen it, are concerned, there are none. But after we have digested the information we have received there may be some." But everywhere they traveled they met forest officials - missing some because of the summer season - and visited many State forests, nurseries, experiment stations, and farm forests. Sometimes conditions reminded them of those in the United States, sometimes the problems were being met more successfully than they are at home, sometimes not as well.

In Copenhagen, Mr. Rachford met Mr. Larsen, who spent some time at the Asheville Experiment Station, and other "delightful people" at the Danish forest experiment station. July 28 and 29 were spent visiting the forests on Sealand, the island on which Copenhagen is located. "Denmark is a country of islands," says Mr. Rachford. "She has been practicing forestry since 1810 and while most of her timbered areas are the result of reservations by the Kings, she has increased her forest area since 1810 by 100 percent, and now about 8½ percent of her entire area is in forests." On July 30, the travelers went by boat to Jutland, where they saw the work of the Danish Heath Society, the largest cooperative in Denmark, which deals only with plantations and windbreaks. Windbreaks are planted at reduced rates to farmers, and the Society is reimbursed by the State. On the northernmost point of Denmark (on Jutland), each farm had its windbreak, without which the sand would soon take possession of the area. Numerous plantations were seen, mostly of "Pinus Montana", but some spruce. With Mr. Hisleman, in charge of the Skagen Sand Dune District, they visited the largest plantation of spruce and pine. The ranger station was settled by Sheriff Christian Lund in 1803, who planted the first trees. Lund was an enthusiast but not any too honest, according to tradition, and shipwrecked vessels afforded him plenty of loot. When this was called to the King's attention, he admonished Lund to: "Steal not too much but plant, plant." A monument to Lund commemorates his work.

On August 2 the foresters were in Oslo, Norway. Here they found that the Norway Forest Service, like our own, is a bureau of the Department of Agriculture. The Director was absent, but Mr. Kjoer, who spoke English well, extended every courtesy to the visitors. On a trip to a mountain overlooking Oslo, Mr. Rachford found that "the view from this point reminds one of Portland, Oregon. Stretched before you is the city and harbor, the latter dotted with *** islands. On all sides are vast forests of spruce instead of Douglas fir as around Portland." There was a delightful lunch here at the Legation with fellow countrymen.

The only glimpse of Norway forests was from train windows, but forest problems here are not unlike those in the United States.

In Stockholm, on August 6, Mr. Rachford found the length of the day "unbelievable." Leaving Oslo at 7:15 p.m., at 9:30 he was still looking out the windows at the forests, which reminded him of the Pacific Northwest. In Stockholm, they had breakfast "on the terrace or veranda of the hotel" which faces the palace across the Norrstrom River, a most beautiful setting.

After the usual call at the American Legation, the Chief and Mr. Rachford visited the Swedish Forest Service by appointment, where they were introduced to the Director by the spokesman, Mr. Lund, a distinguished scientist. The meeting was a very formal one, but Mr. Silcox brought it to life by making the statement "that we lost 13 billion feet of timber in one fire." "Impossible," said the incredulous Mr. Lund, "that is half the timber in all Sweden."

Mr. Olson, of the Swedish Forest Service provided escort for the two during most of their stay in Sweden. Mr. Rachford comments that: "We came to Sweden with the understanding that here was a country with a vast timber resource comparable to ours where we could gain information and profit thereby, on the systems used in getting right forestry practices on private land. *** Nearly 80 percent of the forests are in private ownership. *** Farmers' forests comprise 46 percent of Swedish forest land, an average of about 75 acres per farm. These areas are used by domestic livestock and the productivity from a timber standpoint is low. Conditions are bad on the whole. So on this point we can check a standoff between Sweden and the U.S." The forests of the landed proprietors are well managed, grazing has been regulated - "check for Sweden." "Company forests are managed by trained foresters *** and the areas are subject to inspection by the State," which "is decidedly in favor of Sweden." But the impression remained that private owners have an enormous influence on State regulations, etc., and that only careful inspection can determine whether the practices are all that statements indicate.

A very pleasant feature of the stay in Sweden was a visit with the family of Lagi von Wernstedt, an old friend of the Chief, and a member of the Portland office of the Forest Service. On the morning of August 7, Mr. Silcox and Mr. Rachford left Stockholm for Noerkeping, where they were met by a forest officer and Hjalmer von Wernstedt, brother of Lagi. With these two, a visit was made to a forest area of about 5,000 acres operated by a farmers' cooperative association. Later on, the party drove to the von Wernstedt estate. Of this Mr. Rachford, says in part: "Here we got a glimpse of how the large landed proprietor lives in regal style; how closely farm and forestry are tied together in Swedish economy and the lives of the laborers employed in field and forest. I can't begin to describe the beauty of the home and surroundings or the royal reception or entertainment accorded us."

Returning to Stockholm, more visits were made to State experiment stations and forests. Of Swedish forest officers, Mr. Rachford says: they are "most responsible people. They handle all administration including finances without bond. Everyone has his own bank account (State), receives and disburses money."

An interesting visit was made to a wood cutter's home on Sunday when "the whole family was dressed in their best and cleanest bib and tucker. *** On this farm the renter has a couple of horses and four cows, pigs, chickens, etc." The farm "consists of 4 ha. farm land and 10 has. of grazing land, rented by the State for 200 k. per year. These farms are carved from the forest or are the result of drainage of swamps. Every person owning or renting a farm *** is guaranteed a number of days' work per year, the work being located on adjoining areas which makes it possible for the worker to stay at home each night."

On August 10, a trip was made through forests and by delightful forest farms, with a trip down the Averkalix River at 9:30 "with the sun still above the horizon." Then more trips through forests, sawmills, paper mills, inspection of river driving, gathering of information on a real cooperative effort, with lunches and dinners such as only Sweden can provide. Back in Stockholm on August 13, the party was met by Mr. Lund, who gave them more interesting facts about private forestry in Sweden.

Although the travelers left Sweden with regret, they had a delightful boat trip to Helsingfors, where they were soon greeted by a Finnish Forest officer. The day after arrival, a 200-mile trip was made through heavily timbered country dotted with farms and lakes. Finland has 60,000 lakes "and her water transportation is similar to Sweden. That is why they can log so cheaply and send so much paper to the U.S.," writes Mr. Rachford.

Unfortunately, the passports to Russia had to be used before August 20, which spoiled the plans of friends who had planned a 4-days trip for the visitors, and it was necessary to bid farewell to the pleasant Scandinavian countries.

"WHO READS GOVERNMENT REPORTS AND BULLETINS?"

By Eunice Skamser, Rocky Mt. Forest Exp. Station

The Service Bulletin containing a contribution with the above title from Region 5 arrived in the same mail with "Soil- The Nation's basic heritage", a publication by the Soil Conservation Service so arresting in its composition that it was impossible to put it aside until all of its pictures had been viewed. Of course association has created an interest for me in such things that is probably more vital than that of the average layman, but I believe that this publication would be avidly consumed by anyone having time to read it and the opportunity to see it.

The text is succinct and convincing; the illustrations are beautiful and graphic. The whole brought to mind two other extremely interesting governmental publications that were received in the past year.

The first publication that comes to my mind is the annual report from Italy, entitled "La Milizia Forestale, Anno XII". Without knowing more than a few Italian words, one can see that forestry is vital, diverse, and progressive in Italy. True, the garish colors of the section covers in this report were probably chosen with malice aforethought to appeal to the Italian public, but the message undoubtedly was assimilated thoroughly.

The other publication, "Little Waters - Their use and relations to the land", is probably known to most foresters who have had any occasion to seek references on this type of subject, and it conveys a message on water resources and erosion such as could be obtained in no other way. Not many of us have imaginations that will make scientific and statistical matter live if the author has not used his own imagination in anticipating the questions that the reader will want answered. I am speaking now for the layman.

There is a place and a need, of course, for purely scientific writing, but such publications are ordinarily wasted when they are sent to the general public. Most people are science-conscious and are eager to know the results of its mysterious ways. They do not, however, want to be burdened with technical and scientific verbosity which demands a toll of the reader. They do want information that is understandable, that lifts the level of ordinary thought, and explains the purposes of the public support. That support would surely be more adequate if the donors understood the uses of their money. For example, many subscribers willingly pay $5 per year to read the Science News Letter which makes many abstruse subjects alluring.

But this art of telling the public what it wants to know in the way it should know it is an Art. As in music, the listener should not be conscious of technic, but that technic must be so sure and subtle that the aidience is caught up emotionally and intellectually and enabled to see truth and beauty eye-to-eye with the composer. The composer is often so aware of the intricacies of the composition and the devious methods by which he has attained the end that he cannot attain the impersonal view needed to interpret the entity to the audience. The interpreters of scientific endeavor, whether called "publicity men" or not, have a great responsibility and opportunity.

Some gifted men overlook both the opportunity and responsibility and pride themselves in aloofness and disdain the common mind; others do try to interpret their work and despair of doing it adequately; and a few combine the rare talents of originality, finished technic, and interpretative ability. Many could learn to interpret their work if they really tried to do it.

To be a well-informed citizen today it is necessary to know a great deal; so much in fact that one is appalled at times. If pictures made with consummate skill can show us the thing we need to know, and words authentically constructed and reduced to the paucity of stark, beautiful truth can explain what the pictures cannot present, then this is the means of helping us to know what the Government is doing and why.

Perhaps the Forest Service can learn the art of this type of presentation. Evidence of a beginning appears from time to time and is increasing. We shouldn't be discouraged, but we do have to remember that no one is going to be interested in forestry just because he should be interested. We have to appeal to the senses that will build that interest.

ENROLLEE TRAINING ON THE DESOTO

By H. R. Kylie, Washington

The CCC enrollee educational system in use on the DeSoto National Forest in Mississippi has created considerable interest. The point of departure from the average set-up is the morning system of vocational instruction. It is assumed that the technical and supervising personnel must accept the responsibility for instruction in Conservation and Vocational subjects. A program is prepared for each camp by the Camp Superintendent, the Educational Adviser, and the Camp Commander. Morning classes are taught two days each week. One hour of the two spent in classes is on work time and one is on the enrollee's own time. That is, half of the time spent in morning instruction is made up on the job. Practically every member of the supervising personnel teaches at least one class a week, and all enrollees must take one course.

A course may be no more than supervising laboratory work in some educational project, yet each foreman who has a desire to contribute can give effective instruction. This plan not only aids enrollees, but is helpful in leadership training for the supervising personnel. Those men of the technical staff who are better qualified to give lecture courses and lead discussion groups, participate in afternoon and evening classes. Interest in education is kept up, and news relating to training activities disseminated through the Educational News Letter which is circulated throughout the forest each month.

A training program for the supervising staff is also in effect on the DeSoto. Examinations are given to these men every three months. They not only test the men on knowledge necessary to do the job, but also upon general knowledge relating to conservation, the Forest Service, and E. C. W. These examinations insure self improvement of supervising officers, and a wide awake organization.

DROUGHT DAMAGE TO TREES

A correspondent in a commercial nursery in Minnesota writes as follows, in reply to a questionnaire on drought damage sent out by the Division of Silvics:

"The greater portion of the damage in our section has not been from the drought but from that continuous, intense heat which we had during the months of June and July. With thermometers showing 111° in the shade, it is only guesswork what actual heat was generated in certain places where reflection was worse than others.

"On certain types of Colorado blue spruce the damage on the south side was considerable. I say, certain types because it has been our experience that seed selection is of tremendous importance in planting trees. We find in our nursery, Colorado blue spruce from possibly northern New Mexico were damaged while right beside them Colorado blue spruce from northern Colorado stood it very fine.

"Of course we find in the nursery that a tree which has suffered through attacks of insects is of lower vitality than others which are free and as such will succumb a good deal easier. Apparently there were none uninjured and there are no trees which had not suffered widespread damage throughout the locality. In making that statement, I was a little in doubt as to whether or not it was absolutely correct and yet if any tree escaped the effects of the drought it is possibly the green ash, Fraxinus lanceolata, and even that tree, I found upon a later investigation, shows individual specimens that had suffered. It is fair to say that the two outstanding trees which came through in this locality with colors flying were the green ash and the Colorado blue spruce. The ponderosa pine showed a little searing but I believe will come through very nicely. Austrian pine suffered badly. Scotch pine came through fairly well. Exotic varieties such as Colorado blue spruce, Scotch pine, ponderosa pine came through from excellent to fair while white pine, Norway pine suffered. Arborvitae stood it very nicely but the Black Hills or white spruce where the seed was secured from northern Minnesota suffered; where the seed was secured from eastern United States, it killed out, at least damaged to such an extent it is questionable whether it will come out or not. Douglas fir killed out. In places where it was amply protected from the South, the Douglas fir carried through.

"You will notice that I mentioned poplars, all varieties except cottonwood. The cottonwood came through with colors flying while varieties such as Norway poplar, Carolina poplar, Northwest poplar, Canadian poplar, etc., suffered more or less.

"Shrubs that are growing as underbrush came through in very nice shape and Caragana, honeysuckle and Russian olive stood it better than some of the best trees.

"I agree with you that possibly the greatest damage may not show up yet. Should we get late fall rains or get a late fall growth, we may find ourselves in considerable trouble this fall."

"HERE ARE FORESTS"

By Martha Bensley Bruere, Washington

It is gradually dawning upon us that if we are to assure ourselves an indefinitely rising standard of living for a steadily increasing number of people, we must budget our resources not in terms of money but in terms of goods and services. Not only that, but we must understand the interrelation of our different resources, one with another, and their allocation to different uses. This little pamphlet offered to the delegates of the Third World Power Conference is an attempt to show one such relationship - the relation between forests and electric power; first, that while our other sources of power - coal, oil, gas, and water power - have definite limits we can have as much fuel from forests as we choose to grow and for as long as we take the trouble to produce it; second, that by protecting the watersheds forests can even up the flow of streams on which the production of Hydro electric power depends and by preventing the silting of power dams prolong their usefulness; and, third, and most important, that forests offer us a place to pass the leisure which the Power Age has given us. To sum up, here is the final paragraph from the pamphlet:

"The end product of all these integrated services is the same for which power is being produced - human security and comfort and happiness. When the oil wells run low and the gas wells are no more than a remembered aroma, when all that is left of the "Coal Measures" is a note or two on the doings of Carboniferous times, when each raindrop is giving an account of itself, and the cry is still for more power, then here are forests, gentlemen."

YE EDITOR DISCOVERS

Assistant Chief E. W. Tinker reports that after a recent inspection of the Shelterbelt Project he has come to the following conclusions:

(1) Astounding results have been obtained, in the form of survival and rate of growth, through correlation of seed source and species with soil types, in the face of adverse conditions;

(2) Excessive costs are traceable to conditions over which the Service had no control;

(3) The project was well designed and technically, effectively carried out;

(4) The results have been all that were claimed, and, if the project had been carried to completion under the original plan, it would have been an outstanding success;

(5) The merits of a tree planting and farm forestry program in the "Twilight Zone" between the Great Plains area and the rich agricultural soils immediately tributary to the Mississippi River are unquestioned.

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It would seem that the Forest Ranger radio program rates well up among 'em in popularity. According to every recent survey, the Farm and Home Hour, of which the Ranger program is a feature, has top place among information programs with farm people, while the latest Crosely cooperative survey ranks it among the first five of daytime features with the city audience. While the Forest Ranger program is not checked separately from the Farm and Home Hour, we have been told that it drew about 50 percent of all the fan mail for the whole Hour, which indicates that it is easily the most popular feature on that program. To be the most popular number on one of the first five daytime programs in the country gives the Forest Ranger feature a pretty high rating.

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Bids from prospective operators of "Timberline Lodge", now nearing completion on Mount Hood, Mount Hood National Forest, Oregon, are being called for, according to a recent news release issued by Region 6. Terms of the hotel operating permit have been accepted by the Mount Hood Development Association local permittee group of interested citizens, approved by the Secretary of Agriculture, and it is expected the new hotel, with accommodations for some 200 guests, will be open for business January 1. Among other requirements, applicants must undertake to provide lodge equipment and furnishings estimated to cost up to fifty thousand dollars.

The W.P.A. project of $246,283, making the hotel possible, was approved last December. It provided for the W.P.A. building the structure on National Forest land under supervision of the Forest Service. Work is being rushed to completion by the W.P.A., heavy snow banks having been battled earlier in the season to permit the delivery of materials for completion of the building within the specified time. The structure with the landscaping and ground improvement upon completion will cost in the neighborhood of $350,000.

The site of the hotel is about six miles off the Mount Hood Loop Highway above Government Camp, and can be reached from Portland in about a two hours' drive. Situated at timberline, at an elevation of about 6000 feet, the lodge has an overall length of approximately 360 feet, is four stories high, and has two spacious lounge rooms containing huge fireplaces. Exterior grounds will provide ample parking space, trails, and tennis courts. Mountain climbing, horseback riding, and winter sports will be among the attractions offered.

It was estimated that 50,000 people used the slopes of Mount Hood for winter sports during 1935-1936, as many as 25,000 being present at single events. The development is the culmination of many years of effort on the part of local groups and the Forest Service to provide adequate hotel and recreational facilities on Mount Hood.

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Approximately 40,000 illiterate enrollees in the Civilian Conservation Corps have been taught to read and write through the camp educational programs since the beginning of the corps, according to a recent report by Howard W. Oxley, Director of CCC Camp Education.

Reducation of illiteracy has been one of the major objectives of the educational program in the camps, and men entering the corps unable to read and write have been encouraged to participate in classes arranged for illiterates. At the end of the 1936 fiscal year, 92 percent of the 7,595 illiterates enrolled at that time were learning to read and write. This figure compares with the 88 percent of the illiterate enrollees who were participating in classes in reading and writing at the beginning of the fiscal year.

"An analysis of the educational level of the CCC enrollments reveals that approximately 2½ percent of the men are illiterate when they enroll", said Mr. Oxley in his report.

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John Kerr Peak, on the Continental Divide, within the Apache National Forest and on the district where John Kerr first served as ranger, has been named for him by the National Geographic Board and was dedicated to his memory on Sunday, September 13. A rock monument, on which a bronze tablet has been mounted, has been erected on the summit through contributions from friends. Mrs. Bertha Kerr, his widow, and relatives from Texas, in addition to numerous friends among Forest officers and officials of the Soil Conservation Service and the Biological Survey from Albuquerque and other points, attended the ceremonies. The peak can be reached by car from the Magdalene-Silver City Highway by turning off about 12 miles north of Reserve.

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The cartoonist "King" is apparently a good conservationist. Early this spring he had a series of five strips on forest fires in his "Gasoline Alley" feature, and on September 14, he had one on reforestation as a flood prevention measure.

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D. C. Heath and Company has published a new grade school test on forestry and lumbering, "Tales of an Old Lumbering Camp", by John Hamlin, for which the Washington Office furnished much material and illustrations.

Under an editorial entitled, "Forest Service", the New York Times, on September 12, referred to the silver jubilee of the Weeks Law enactment and expressed a sympathetic appreciation of Forest Service policies in acquisition and administration of land purchased under the terms of the Act. The editorial says, in part, "Twenty-five years ago a very definite step was taken looking especially to the protection of watersheds, the sources of streams that become navigable rivers. ***** In the purchase program the United States Forest Service acquires land only through voluntary sale by owners". The Forests acquired "serve more than their original purpose. Their recreational uses grow rapidly and extensively especially in the northeastern areas, where the gain amounted last year to 92 percent."

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Russia's naval stores industry, now celebrating its tenth anniversary, has grown rapidly in recent years and according to Soviet claims, now stands third among world producers, the output being exceeded only by that of the United States and France, say reports reaching the Commerce Department. The industry which is said to employ approximately 70,000 workers is reported to have produced 80,000 tons of crude gum in 1935 and the current year's program calls for an output of 100,000 tons. The country is reported to be entirely self-sufficient insofar as its turpentine and rosin requirements are concerned.

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Dean S. T. Dana who is on Sabbatical leave from the University of Michigan is being employed by the Forest Service for several months to take temporary charge of the Division of Forest Economics with the possibility of special assignments to meet other emergency requirements of the Branch of Research in Washington.

SEVEN WINDBREAK TREES PROVE HARDY IN TESTS ON NORTHERN GREAT PLAINS

Seven broadleaf tree species, out of 18 tested for 20 years, are recommended for windbreak planting in the northern Great Plains by the Division of Dry Land Agriculture of the Bureau of Plant Industry. They are Chinese elm, green ash, chokecherry, boxelder, Siberian pea-tree, buffaloberry and American plum.

The tests began in 1914 at Mandan, North Dakota. Plantings were completed in 1917. The willows, poplars and birches began to die out a few years after planting, and most of them were gone by 1928. The Norway poplar survived better than other poplars, but the few that were planted had an exceptionally favorable location. It cannot be recommended where moisture is scanty.

The fact that nearly all trees of the seven species survived the 1915-1934 period -- of which 1917 to 1921 were the five driest consecutive years for the region on record -- is pretty good proof that they are adapted to this dry climate with extremes of temperature, high winds and a high rate of evaporation, say the Department of Agriculture men who conducted the experiment. To date the seven seem to be surviving the summer of 1936. - Dept. of Agri. Press Release

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xxxx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 21 Washington, D. C. October 12, 1936

DIVIDENDS FROM EIGHTEENTH CENTURY CONSERVATION

By A. L. MacKinney, Appalachian For. Expt. Sta.

One hundred and fifty years ago a French Huegonot physician John de la Howe, had the foresight to recognize the future value of timberlands. In his will he partially endowed an industrial school "for 12 poor boys and 12 poor girls" in the Piedmont section of South Carolina, with the following provision:

> "That one thousand acres shall forever remain in wood or forest in order to supply the farm with fuel and timber and in the process of time contribute to the support of the institution."

Since this will was written, only sufficient timber to supply the immediate needs of the school has been cut. Accordingly, about half of the thousand acres bears excellent stands of timber, mainly shortleaf and loblolly pines, ranging from 120 to 170 years of age.

The Forest Service became interested in the tract two years ago, because it bears stands of timber unique in the Piedmont region for their age and unburned condition.

After a series of conferences between representatives of the School, the South Carolina State Forestry Commission, and the Appalachian Forest Experiment Station, a tentative agreement was drawn up providing for:

1. The setting aside of a natural area of 125 acres of the oldest timber to be withdrawn from all cutting and treatment in perpetuity.
2. The preparation of a management plan for the property by the South Carolina State Forestry Commission, Sumter National Forest, and the Appalachian Forest Experiment Station.
3. The handling of the forest property (excluding the natural area) under the provisions of the management plan, the work to be supervised by the South Carolina State Forestry Commission, and the Appalachian Forest Experiment Station to act as consultant.

This preliminary agreement has been in effect two years now, and all parties have fulfilled their obligations; the management plan is finished, a timber sale has been made under a very slightly modified standard Forest Service timber sale contract calling for felling of only marked trees, penalty scale of damaged trees, etc., a representative of the South Carolina State Forestry Commission is marking all timber to be cut following marking rules drawn up by the three cooperating forestry agencies, and the natural area has been set aside. The Appalachian Forest Experiment Station has already established 79 permanent sample plots on the natural area and 32 on areas to be cut over this fall.

The timber sale now in operation is quite outstanding in the region, because it is the first scale to be made under a stringent contract calling for the use of the international log scale, as well as for felling of only marked timber. The sale also sets what is believed to be a record high price for stumpage on small farm woodlands, $10.25 per M bd feet scaled on the mill deck. All top wood and limbs, and trees marked for removal for stand improvement, are being cut into cordwood for use of the school.

We believe that this property will become extremely valuable not only for research purposes, but also as a demonstration of how small farm woodlands can be handled profitably. In connection with this work, the South Carolina State Forestry Commission says:

> "The acceptance by the school authorities of forestry practices as recommended by the State Forest Service and the Appalachian Forest Experiment Station is a forward step in the wise use of forest lands for the particular property, and is an excellent example for other timberland owners and farmers to follow."

THE WEATHER BUREAU DISCUSSES THE DROUGHT

The passing of August brought to a close one of the most disastrous summer droughts ever experienced in United States history. The heart of the agricultural section of the country, that part lying between the Appalachian and Rocky Mountains, experienced an unprecedentedly hot, dry summer, with rainfall less than half the normal over large areas. The deficiencies in rainfall centered in Missouri, Kansas, and Oklahoma, where temperatures were unprecedentedly high and there was less than one-third the normal rainfall for the three summer months, June - August. On the other hand, the States from the Rocky Mountains westward enjoyed more than normal rainfall and conditions there were generally favorable. In the more eastern States there was some lack of rain in many places, but the drought generally was not severe.

The summer was the dryest of record in Illinois, Missouri, Oklahoma, Kansas, Nebraska, and the Dakotas. In addition to these, Indiana, Wisconsin, Minnesota, Iowa and Arkansas had less rain in the summer of 1936 than during the same season in the drought of 1934. Previous high-temperature records were exceeded in many sections.- Weekly Weather & Crop Bulletin, U. S. Weather Bureau.

LOOKING BACKWARD

By W. H. Daugs, St. Joe

As I look back over my 33 years in the Forest Service, I cannot help but marvel at the vast changes that have taken place.

It was on July 1, 1903, that I received my first appointment. *** At that time, the average salary paid a ranger was $60 per month without subsistence, and from this stipend he was required to provide himself with saddle horse, necessary field equipment, and tools. Outside of a Service badge, nothing was furnished by the Government. Then, too, a ranger job was of short duration, covering usually a period of from three to four months, and furthermore, there was but little chance for advancement. The ranger's job then consisted almost entirely of constructing and cleaning out trails and patrolling for fires.

Telephones and lookouts were unthought-of luxuries. There were no funds for improvement work of any kind, and what new trails that were built were put through by the rangers themselves, since there was no money for the hire of guards or extra laborers.

As a fire prevention measure, at one time, the Bureau of Forestry in Washington expected the ranger to clean up the forest floor by raking up the needles and leaves. For this purpose, rakes were provided by the Bureau. For firefighting purposes, it furnished leather buckets for carrying water to the fire. Needless to say, the Supervisor, understanding the real conditions, didn't allow such equipment to go out in the field. While this equipment was furnished prior to my entering the Service, some of it was still to be seen stored away in the Supervisor's woodshed.

Because of the lack of funds, fire suppression work was necessarily uphill business. Somehow we managed in those days to get our fires while they were still small enough to be handled by our own limited organization. Sometimes, practically the whole Forest force was concentrated on one fire, and we stayed with her until she was out. I have often recalled my firefighting experience during the summer of 1904. In early July, Ranger Liebig and I had gone up on Flat Top Mountain on the Continental Divide to lay out and construct trail. From this vantage point, we saw smoke rolling up on the Upper North Folk of the Flathead River. Although we made for the fire immediately, it required two days to reach it. When we arrived ,we found Supervisor Haines and one ranger ("Death on the Trail") and a few local settlers at work on it. The fire at the time must have covered at least 100 acres. To make matters worse, we soon found it was not the only fire in the vicinity we had on our hands, for the same storm that had set this one also had set several others, each of which was doing a good job of burning up the woods.

I have often wondered how we managed to keep these fires within bounds and eventually put them out. I know that we all fought fire until we could keep awake and on our feet no longer. I can still see old "Death on the Trail" on his knees desperately digging away at the grass and duff with his hands - perhaps it was this spirit that did it.

Soon after the transfer of the Forests to the Department of Agriculture, when the first year-long ranger jobs made their appearance, things began to happen. One of the first acts of the new administration was to send out West a bunch of trained foresters as technical advisors to the Supervisors. However, as Supervisors had never been accustomed to having even so much as a clerk heretofore, some seemed at a loss to know what to do with the new arrivals.

In the late spring of 1907, the Lewis and Clark (North) which incidentally had become the Blackfoot Forest Reserve, held its first ranger meeting. This took place at the Fish Creek Ranger Station at Lake MacDonald. At this meeting, I met E. A. Sherman for the first time. He gave a very interesting talk about the growth of the Service. I recall how he described his surprise at receiving a typewriter from Washington for use in his office - I think, at Missoula, Montana. He was so certain that some mistake had been made that he wrote in about it, but he was assured that the machine was really intended for his use. Up until about a year previous to this time, the Supervisor was required to furnish his own office quarters, if he had any, and Harold Redlingshafer, our first Forest clerk, was added to the Forest staff in the spring of 1908. About this time, ranger examinations began to be held. Things were getting entirely too complicated for some of the oldtimers who preferred to go back to the more congenial occupation of trapping or prospecting ,as the case might be, thus creating vacancies which were filled by men better equipped to cope with the changing conditions. The Service had, so to speak, donned its long pants. The beginning of the end of the pioneering days was in sight, but it took the disastrous fire year of 1910 to show up the weak points in our protection system as nothing else could have done and to force upon the consciousness of Washington that if the Forests were to survive, a more liberal monetary policy must be adopted. Soon the purse-strings began to be loosened. Telephone and lookout systems came into being and much-needed trails into the back country began to be constructed in earnest. Things changed rapidly from that time on, other bad fire years came to teach new lessons and urged us on to better accomplishments, and now we of the old pioneer days stand at the end of our trail of service looking backward.

HITCHCOCK'S "GENERA OF GRASSES" REVISED

By W. A. Dayton, Washington

Field men interested in grasses will appreciate knowing that the late Prof. A. S. Hitchcock's "The Genera of Grasses of the United States" (U.S. Dept. Agr. Bull. 772. 1920) has recently been revised (by Mrs. Agnes Chase). Although it is 5 pages shorter (302 instead of 307 pp.) it actually contains more material, by changes in topography, and removal of leads and duplicating pictures. There are several new pictures and descriptions, including *Aegilops*, *Piptochaetium*, *Schizachne*, *Schismus*, *Sclerochloa*, and *Vaseyochloa*. The nomenclature is in accord with that of Hitchcock's "Manual of the Grasses of the United States," and follows the International Code. The former edition used the American Code. Thus, *Aira*, *Aspris*, *Bulbilis*, *Chaetochloa*, *Holcus*, *Nazia*, *Notholcus*, *Panicularia*, *Torresia*, and *Valota* are replaced, respectively, by *Deschampsia*, *Aira*, *Buchloe*, *Setaria*, *Sorghum*, *Tragus*, *Holcus*, *Glyceria*, *Hierochloe*, and *Trichachne*.

Unfortunately, the Department supply is extremely limited. It can be purchased from the Superintendent of Documents, Government Printing Office, for 35 cents.

LIVESTOCK GRAZING ON THE NATIONAL FORESTS OF REGIONS SEVEN, EIGHT AND NINE

By John H. Hatton, Washington

Increased social uses of the Lake States and Eastern National Forests, which will no doubt occur, may increase somewhat domestic stock uses with milk stock and horses, and on some of the newer purchase areas in Middle West States, there may arise more local demands for small numbers than have been recorded up to this time. For the calendar year 1935, the statistical records show 389 permits issued in 12 of the States for 3,668 cattle, 16 horses and 152 swine; and for sheep and goats 100 permits for 2,345 sheep and 10 goats. This is an average of slightly less than 10 head per permit in the cattle, horse and swine class and about 23½ head per permit in the sheep and goat class.

In addition to the livestock that grazed under pay permit, 3,043 owners grazed 8,731 cattle, 261 horses, and 4,352 swine; and 11 owners grazed 63 sheep and 100 goats under the regulation permitting free grazing. This free grazing is slightly over an average of 4 head per permittee in the cattle, horse and swine class and slightly under 15 head per permittee in the sheep and goat class.

It appears that the pasture resources of Regions 7, 8, and 9, compared to the Western Regions, will not become an important factor in livestock production beyond accommodating a few local demands. The outlook for materially increased forage uses in the States concerned will probably be more in the direction of increased wildlife uses for which these lands and types of cover are generally well adapted. Considering the large numbers of important urban centers in this territory it would seem that the largest services to the public from the use of the forage resources will lie in that direction. And why not?

CENTRAL STATES FORESTRY CONGRESS PASSES RESOLUTIONS

At the Central States Forestry Congress held at Elkins, West Virginia, September 28 and 29 and October 1, the following resolutions were adopted:

1. Recognizing the many beneficial, social and economic effects upon the Nation and the Individual States which have come from Federal leadership and financial assistance in forest land management problems, it is recommended that the Federal Government continue its contributions toward the solution of these pressing problems, and particularly through enactment of Legislation where needed and appropriation of adequate funds for:

   a. Acquisition of National Forest lands under the provisions of the Weeks and Clarke-McNary Laws.
   b. Acquisition of State forest lands under the provisions of the Fulmer Act.
   c. Expansion of forest research to provide the information necessary for successful accomplishment of forestry projects.
   d. Promotion of a nation-wide farm forestry program in cooperation with appropriate State agencies through a plan embodying cooperative principles similar to those already established under the Clarke-McNary Law.
   e. Organized forest fire prevention and control under Section 2 of the Clarke-McNary Law.
   f. Continuation of the Civilian Conservation Corps on a permanent basis.

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2. Efficient and economic development of State forestry programs is dependent upon departments that are manned by a trained personnel, whose term of service shall be based on performance alone.

The Congress deplores the frequent changes that are made in State organizations based upon considerations other than efficiency. It desires to record itself in favor of the Civil Service or merit system principle in the employment of personnel.

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The Congress also reaffirmed the following resolution adopted last year:

"That it is the settled conviction of the Central States Forestry Congress that it would be distinctly detrimental to the cause of conservation if those agencies which deal with the organic and renewable natural resources of the Nation, such as, forests, fish, game, etc., and including the soil, be transferred to any other department of the Federal Government from the Department of Agriculture, and thus disassociated from those multiple services, of the department which are so vital to their best interests, and that this Congress shall make known to all members of the United States Senate and House of Representatives elected from the States within its territory, its decided opposition to any legislation intended to result in any transfer; and shall further respectfully request of them that any legislation enacted to create new departments or further to consolidate existing bureaus and services, definite provision shall be made against such transfer of the renewable resource agencies from the Department of Agriculture, and further, in line with this policy, that definite steps be initiated to place the Bureau of Fisheries in the Department of Agriculture".

BIRDS AND CIGARETTE BUTTS

Now forest rangers are wondering if cigarette smoking birds are to be added to the list of fire hazards. They are worried over the discovery of four cigarette stubs found in the remains of a bird's nest in the eaves of a burned building at Dorris, California. Rangers hope that it is only a queer bird who has the snipe shooting habit, as they have plenty of troubles preventing careless travelers, who toss away their burning butts, from causing forest fires. - Region 5

YE EDITOR DISCOVERS

Secretary Wallace has approved the range-building practices and the rates of payment which stockmen may earn by performing them in the range-improvement program for the 11 Western States during the remainder of the calendar year 1936.

The program will be administered by the Western Division of the AAA, of which George E. Farrell is director. It is open to all stockmen in the States concerned, participation to be entirely voluntary. It will appply to privately owned and privately controlled land. Payments will be limited by the grazing capacity of each ranch. Rates of payments and the specifications for practices are the same in all States, but some practices are applicable only in certain States. All practices must be performed according to certain specified standards. The Forest Service will cooperate with the AAA in the administration of the range program.

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Following is an excerpt from notes made by Lincoln Ellison, Northern Rocky Mountain Forest and Range Experiment Station, on the injury to native trees and shrubs, as he came eastward on U. S. Highway 10 from Billings, Montana. Of the injury to ponderosa pines caused by grasshoppers, Ellison says:

"Near Custer the pine trees have been so heavily denuded by grasshoppers that the stands seem from a distance to have been swept by fire. Many trees are completely defoliated. Here the damage is plainly greatest near the tops of the slopes, presumably because the grasshoppers attacked there most readily after cleaning off the tablelands. Although, since the grasshoppers left, the current growth of needles is pushing out again, it is impossible to estimate what proportion of the trees is dead."

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The Office of the Surgeon General of the War Department recently reported to Robert Fechner, Director of Civilian Conservation Corps activities, that the occurrence of disease among enrollees in the CCC during the past fiscal year had been kept at a remarkably low figure. The Surgeon General's office stated also that the death rate in the CCC for the last fiscal year was lower than that occurring among men of similar age groups throughout the Registration Area of the United States.

In his report, the Surgeon General called attention to tests conducted during the last fiscal year which indicated that the average new CCC enrollee gains approximately four pounds during his first month in the woods and two pounds his second month. Discussing the weight gain tests, the report states:

"That the outdoor life, wholesome food, healthful work and regular habits incident to CCC service have been physically beneficial is attested not only by the obviously improved morale, vigor and physique of the enrollee, but is demonstrated more concretely by a record of their early gains in body weight. At the beginning of the year, a check was made on a random sample of some 500 new enrollees in each corps area and the changes in weight reported for a two-month period. The 4,123 men tested showed an average gain in weight of 6.04 pounds at the end of their second month in the corps. Approximately sixty percent of this gain occurred during the first months. A similar experiment conducted two years ago showed that 14,000 new enrollees made an average gain of 7.27 pounds per man, during a six-month period of enrollment."

The report disclosed that the death rate in the CCC for the last fiscal year was 1.97 per thousand men and the injury rate 1.18 per thousand.

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During the fiscal year 1936, 94 copies of Forest Service motion picture films on 39 subjects were sold to outside purchasers: eighty-one 16mm, 25 with sound version; thirteen 35mm, 1 with sound. These films were purchased largely by educational institutions - colleges, universities, and public schools - and forestry organizations, including State organizations in the United States and Canada. Seven foreign countries - Brazil, Spain, Canada, Africa (Southern Rhodesia), New Zealand, Japan, and Finland - took 38 films. Of these 14 went to the Canadian Forestry Association, Montreal, and five to British Columbia Forest Service, Victoria. Spain bought 11, nine going to the Consul General in New York City, and two to the Assnde Ingeniers des Montes de Espona, Madrid. The University of Wisconsin bought the largest number of any purchaser - 17; the Texas Forest Service bought 4 and the Division of Forest Protection, Lufkin, Texas, took another; the Board of Education, Tulsa, Okla., purchased 5; and the TVA 4. The total number of forestry organizations in the United States was 17, two less than went to Canada. Seven films showing work of the CCC were also sold.

The Division of Motion Pictures reports that 4,659 copies of Forest Service motion picture films were sent out on loans for use in the United States during the fiscal year 1936. Attendance at the showings of these films according to reports was 2,763,310 but it was estimated that the total attendance exceeded 4,500,000. Last year the total estimated attendance was 2,670,204, which makes an increase of more than 1,800,000 for 1936.

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On Friday October 2, the National Farm and Home Hour began its ninth year on the National Broadcasting networks, and on that day presented its 2,461st broadcast. The program is a joint presentation of the National Broadcasting Company and associated stations, the United States Department of Agriculture and leading farm organizations, including the National 4-H Clubs, American Farm Bureau Federation, National Grange, Farmers' Union, and Future Farmers of America; in all, about 45 organizations, representing practically every phase of American Agriculture.

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"Reforest and stop sneezing," says Professor Gurth Whipple of the Extension Department of the New York State College of Forestry at Syracuse, N. Y.

Planting forests in open spaces of land will absolutely prevent the growth of ragweed which is responsible for 90 percent of hay fever cases", he says. Victims of this disease, according to Professor Whipple, find relief in large unbroken forested areas and those who have hay fever in a mild form obtain complete relief in such environment.

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In his article "The Red Harvest," published in the September 26 issue of Today Magazine, Struthers Burt pays the Service a nice compliment. He says:

"I doubt if anywhere in the world there is a more efficient, vigilant or courageous service than the United States Forest Service. I doubt if there is one that more consistently improves its methods, its equipment or its morale."

STUDY OF POPULATION REDISTRIBUTION

A 763 page book "Migration and Economic Opportunity" is the report of the above study organized in 1934 and completed this summer. Foresters working in economics and land planning doubtless will desire to be familiar with this book, both because of the comprehensive way that it deals with the subject and the recognition which it gives to the role of forestry in relation to economic opportunity and population movements. The following quotation is cited to indicate the grasp of the authors on the meaning and significance of forestry , and the deficiency of present forest practice:

"If American timber production were reorganized on a sustained yield basis, a significant by-product of the change would be replacement of transient communities, which suffer the drawbacks of short life and subsequent decline, with communities of more permanent character. Assurance of a greater stability would make timber-producing communities more attractive to merchants and service enterprises and to secondary wood-using industries. This might eventually result in considerable increase in such subsidiary activity in these communities and in a measure of decentralization of secondary wood-products manufacture. Such possibilities are not explored at great length, since it is uncertain when and if the underlying change to sustained management will occur."

It is believed that the regional discussions of The Southern Appalachian Coal Plateaus, The Old Cotton Belt, The Cut-Over Region of the Great Lake States, and the Great Plains will be particularly interesting to men in the Forest Service.

The book is published by the University of Pennsylvania Press in Philadelphia and the price is $5.00 per copy .- L. F. Kneipp

AIR SCOUT TALKS TO FOREST FIRE FORCES

For the first time in Region One, an observer scouting a forest fire from the air has been able to communicate directly with the fire boss on the ground.

This was accomplished at the Kelly Forks Fire in the Clearwater National Forest when successful tests were made with a new short-wave radio set developed by Forest officers and which Region One has just received. The new set, designed for airplanes, operates on three of the Region One short-wave frequencies.

The observer in the plane was W. B. Apgar, Regional Communications Officer. On the ground, in charge of the 1,000 men combating the flames, was W. W. Coleman, Supervisor of the Clearwater.

Mr. Apgar described to Mr. Coleman the location of the fire edge, the dangerous sectors, the locations of spot fires and the progress of men at various parts of the fire's 20-mile perimeter. In turn, Mr. Coleman was able to ask questions and to direct the observer's attention to points on the fire which were giving him concern. The result was that men were concentrated where the need was greatest and less menacing sections were manned according to requirements.

The test showed that the radio set could maintain communications over a distance of 65 miles and that the fact that the plane dipped low into canyons had no effect upon the efficiency of the radio.

The new airplane radio set weighs about 150 pounds. It consts of three units, a receiving set, a 50-watt transmitter, and a dynamotor for developing the necessary electric power. - From R 1 News Release.

FAN LETTER

Dear Forest Rangers:

*** I often think how nice the world would be if everybody was as nice as you.

Agnes ___________.
St. Joe, Missouri.

AN AERIAL FIRE CONTROL FORECAST

Russia's army air corps recently set a world record for transporting men and munitions by planes when parachutes dropped 1200 soldiers, 150 machine guns and 18 cannons during maneuvers in the Volga region, according to the United Press.

The troops and guns landed in a strategic position behind the "enemy" troops in eight minutes. Presumably this force, quickly appearing from the skies, would be able to make a highly effective surprise attack.

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Vol. XX No.22 Washington, D. C. October 26, 1936

MANAGEMENT FOR MAXIMUM VOLUME OR HIGHEST QUALITY IN DENMARK

By H. L. Shirley, Lake States For. Expt. Sta.

Denmark has probably the most intensive forestry of any European country and the individual forest supervisors have perhaps the greatest freedom to develop the type of silviculture they deem desirable, regardless of whether they are in private employ, or work for the city or state. As a result, widely diversified silvicultural practices may be found within the country. Two types will be described, that developed at Frisenborg and that developed at Soro.

At Frisenborg emphasis is placed on obtaining the maximum possible yield in cubic volume from a given area of land, and to do this with as little growing stock as possible. Natural reproduction is not wanted and a good seed year considered a curse to forest management.

The forests are started by planting, which the foresters prefer to natural reproduction, since they know how to plant successfully and know how to manage a planted stand. Thinnings are started relatively early, but not before merchantable products can be removed. From then on, thinnings are made frequently and are relatively heavy so that by the time the stand has reached pole size the live crowns on the crop trees include from $\frac{1}{2}$ - $\frac{2}{3}$ the total height. This type of management allows a maximum yield from thinnings. For those who wish to consider percentage yield as a measure of income on investment this system gives the highest returns. It might, therefore, appeal particularly to the private owner. From the national standpoint it has certain disadvantages. It gives a high yield in cubic contents but much of it is in small sizes or inferior quality material. It provides practically no reserve for a period when overcutting is nationally desirable such as during war or depressin.

An entirely different type of silviculture is practiced by Mundt at Soro. Here the primary emphasis is placed on the quality of the product rather than on a maximum yield in volume. This type of silviculture resembles the "Dauerwald" in Germany in producing stands natural in appearance but is even more intensive in practice. The young trees are brought up under the shade of old ones until the selected crop trees have attained a clear length of about twenty to thirty feet or more. Then by gradually removing the old trees and thinning the smaller ones which crowd the crop trees, these are allowed to develop a large, full crown almost spherical in shape, which is maintained until time for harvest. Thinning often occurs at 2-3 year intervals, especially at the beginning when selected trees are being changed from small, whip-like saplings to full-crowned, full-boled crop trees. When carried out in its ideal form this method produces a stem the cross-section of which shows many very narrow growth rings in the center. As much as fifty years may be spent in developing the clean-stemmed sapling suitable for a crop tree. From this point on the annual rings become gradually broader and broader until the time for final harvest. When properly cared for, a 4-inch sapling at 50 years may develop into a 20 inch timber tree at 80 - 90 years.

The yield in cubic volume by this method is not so high as in the system described above, but the final crop trees produce a maximum amount of absolutely clear lumber. The time required to develop the sapling may be long, but during this period the soil is being occupied chiefly by other crop trees. As virgin timber becomes more and more exhausted it appears evident that there will be an ever enlarging demand for this type of silviculture to produce the clear lumber required by industry. Even more than the German "Dauerwald", this system requires a highly trained and very skillful man for its successful administration. It also requires a market for very small sized material as well as for very high quality material. - "Forest Research Digest", Lake States Forest Experiment Station.

MR. RACHFORD PICKS UP "NICK" CARTER'S TRAIL IN DENMARK AND SEES THE PLAINS COUNTRY OF HUNGARY WITH JOHN GUTHRIE

When Mr. Rachford was invited to register at the Danish Heath Society, he found the name "E. E. Carter" on the last line of the book. From that time on, his trail crossed that of "Nick's" several times. At one place he was asked for his opinion on a plantation of "western hemlock growing in a hardwood mixture of beech and oak", about which the Danish forester said, "no two foresters had agreed. *** About the hemlock." Mr. Rachford says, "I admitted I knew nothing *** but that it seemed to be doing well, and that except for pulp purposes we considered it an inferior species. *** Much to my surprise Dr. Mundt (the Danish forester) said that a forester from the United States stated about the same as I did except that he (the forester from the U.S.) seemed to know all about it. The man's name was "Carter."

As Mr. Rachford and John Guthrie wanted to see something of the plains cow-country in Hungary, they left the main party of the Oberleander tour at Budapest on September 15 with a party of delegates for a three days' trip by bus which took them into range country. They were the only Americans in the party and few of the members spoke English, but the informality of the trip brought about not only close personal contacts but several pleasant friendships.

An hour's travel from Budapest gave the party a sight of country life, with oxen plodding along the road or working in the field. The country and towns seemed to Mr. Rachford strikingly similar "to our own Southwest," except our people enjoy better living conditions. In front of the doors hung "rows and rows of red peppers and corn," and frequently could be seen an old woman "stirring a large kettle of the cooking peppers."

At Kekas, however, where they visited a state-owned forest and hotel, there were good meals and excellent service. The forest here was of "mixed hardwoods (mostly beech) severely damaged by frost." Many trees were dying and clear cutting was indicated. In another forest they walked through a mile and a half of beech and spruce. Coming into a little forest settlement, they were greeted by the townspeople, led by the schoolmaster, who had brought his pupils to give them a welcome in native songs, including the Hungarian national anthem. "Here," writes Mr. Rachford, "is a settlement *** which has been maintained for the past 100 years by the forest, which will continue to support it indefinitely."

On the morning of the sixteenth the party was conducted through a State forest which, according to the Germans and the Danes, had been too heavily thinned. It consisted generally of spruce, which is being replaced by hardwoods as cutting progresses.

In the afternoon the party got into the plains country, which, to quote Mr. Rachford, "reminds one much of our South Dakota country in topography. Rainfall about 400 to 500 millimeters, well distributed throughout the summer, keeps the short grasses as green as a lawn. Farming activities were being carried on as far as the eye could reach, and close at hand we could see the nearly white oxen pulling ploughs. We stopped at one farm where we got our first close-up of the saddle used by the Hungarian herdsmen. It is merely a thick flexible felt covered with thin leather.

"Farms are all in individual ownership - no fences - and all herds whether of sheep, cattle or horses are herded by men afoot, and barefoot at that - except for a mounted herdsman with his picturesque robe and accoutrements." In "one little town with the sun setting behind us *** the brilliance of the sunset was surpassed only by that of the stockings worn by men, women, and children, mounted on their wagons pulled by oxen and returning from the day's work in the field. The slow plodding of the oxen *** and the piles of green corn on which the people sat added just the touch to make a perfect picture."

On September 17, the party got into the real range country. "Short grass *** green as a lawn. Herds of cattle, sheep and horses could be seen in all directions - not a stone to be found anywhere. A herd of about 125 bulls, another of 100 steers, and still another of 125 brood mares were rounded up for our inspection. It was here we got our first close-up of the various herdsmen and saw the mounted ones race around a herd of horses. They are wonderful riders, using only their pads for saddles and without a cinch. Their lasso is a hemp hard-twisted ½ inch rope coiled around the horse's neck with one end fastened to a leather 2 inch neck strap. **** It is evident that if they ever rope anything the horse must handle the situation with the rope tied to his neck strap. The long robes worn by these herdsmen are made of heavy wool *** and ornamented with the most elaborate embroidery. The robe is worn as a cape and the very large sleeves are sewed at the bottom and are used *** for carrying lunches, etc. To make the garb more picturesque the hat with its low crown and wide turned-up brim has a very colorful feather sticking straight up. **** The cattle are used mostly as oxen, the sheep approach the Karakul breed, and the horses are known as the Nonnis (?) breed. Every horse no matter how poor or old shows generations of good breeding. The herdsmen we saw were mounted on mares with suckling colts by their sides."

From the picturesque range country the travellers were going on to the beauties and sophistications of Vienna, to Czechoslovakia, to Munich, and several other countries, about which we hope to hear upon their return to the United States.

CANADA SHORT-GRASS PLAINS RANGE PLANTS LOSE N AND H_3PO_4 WITH MATURITY

By W. A. Dayton, Washington

Dominion Agrostologist L. E. Kirk of Canada, in an interesting paper, "Forage-crop production in dry-land agriculture and on ranges in western Canada" (Empire Journ. Expt. Agr. 3(12):320-330. Oct., 1935), has this suggestive note on western Canada short-grass plains range plants (the provinces covered being Alberta, Saskatchewan, and Manitoba):

"Chemical analyses of the native species show that they are high in protein when in the leaf-stage, and that at this time they contain also sufficient phosphorus and calcium to meet the animals' requirements. As the plants approach maturity there is a marked drop in nitrogen and phosphoric acid. As cured grass for late autumn and winter grazing, there is a deficiency in the phosphorus-content of these species. Calcium-content does not drop to any considerable extent. To overcome this lack of phosphorus in the native herbage some stockmen are now beginning to feed mineral supplements of bone-meal or monocalcium phosphate."

It would be of interest and value to know if a similar situation obtains on our own short-grass plains and, if so, whether remedial measures, for example, supplemental feeding or the introduction of legumes such as sweetclover, may be indicated.

If, say, the Northern Rocky Mountain and (Central) Rocky Mountain Stations were to become interested in this problem, and had the necessary personnel to tackle it, the question of financing the required chemical analyses of forage would probably arise, the Bureau of Chemistry and Soils of our Department not having at this time sufficient personnel and funds to take on additional work.

FORESTERS AND LUMBERMAN WATCH PROGRESS OF HENRY FORD'S MODEL TOWN

Farmer-woodsmen, chosen from Ford employees in L'Anse, Pequaming, and other towns in Michigan's upper peninsula, will soon be brought together in a model farm-industrial village as a part of Henry Ford's "back to the land" movement. The Forest Service collaborated with the motor company in laying out the groundwork of this plan of sustained yield management in conjunction with subsistence farming.

In the proposed community, trees and agricultural produce will be raised and harvested. In the summer the men will farm their cleared land to supplement their wages. The rest of the year they will cut logs and convert them into lumber at the mill. A small, very modern mill has been in operation since August 3. The ownership of the timber will remain with the Ford Company, but farms, buildings, equipment, and livestock may be deeded to subsistence farmers after a period of amortization or at the end of the first cutting cycle. If this initial project works out all right, it is planned to apply the idea to approximately 250,000 acres of commercial hardwood timber which the Ford Company owns in Michigan's upper peninsula.

The maintenance of these timberlands in a productive condition on a sustained yield basis will be watched with interest by professional foresters. It should prove to be more or less exemplary to other timberland owners, since in the past this company's progressive action has proven advantageous so often.

REFORESTATION IN HAWAII

In the greatest reforestation project undertaken since Hawaii became a territory of the United States 38 years ago, 5,406 acres of denuded government land have been replanted during the past year, according to a report by Frank H. Locey, president of the territorial board of agriculture and forestry. This is double the record set during the previous year.

Hawaii's reforestation campaign is for conservation of water rather than for possible profit from lumbering, although several species of the trees, such as Sandalwood and Koa which have been planted, have in years past been of excellent commercial value.

With the planting of these 5,406 acres, Hawaii has a total of 11,047 acres of trees under cultivation. Five government nurseries during the past year supplied 2,644,629 trees to government and private planters and this figure is expected to be increased substantially during the coming year.

In past years some of the reforestation efforts have been comparatively unsuccessful, owing to depredations of wild animals. To counteract this menace, federal funds have been placed behind the reforestation project through the Civilian Conservation Corps. The CCC enrollees have constructed 63 miles of woven wire fence and repaired 55 miles of existing fence enclosing the forest reserves. While the CCC was carrying on this constructive work, hunters killed 3,390 wild goats, 2,924 wild pigs, 3,358 wild sheep and 15 wild cattle. These wild animals have in the past eaten the young trees over wide areas, nullifying the work of the planters almost as rapidly as it was completed.

Another serious handicap in the past has been the difficulty of patrolling the forest areas owing to their jagged terrain. So rough and jagged was the country neither man nor horse could penetrate it without difficulty and danger. The lava spewed out centuries ago from the volcanoes cut through shoes so rapidly as to make exploration of these regions on foot impracticable.

Here, too, federal funds have been employed in the construction by the CCC of 52 miles of foot trails, 67 miles of rough truck roads and 121 miles of horse trails. These paths are so laid out as to afford fairly easy access to the former isolated sections of the reserve. Not only will they enable the hunters to seek wild animals in their heretofore inaccessible lairs, but will permit greater efficiency in the regular patrol work.

"These trails in the mountains are well graded to afford quick travel," points out Charles S. Judd, territorial forester. "Formerly pig hunters had to break through the ridge trails at a slow pace and could not reach the hunting grounds and return before dark. Now the hunters can reach the farthest back country and return the same day or spend the night in one of the shelter cabins which have been constructed at strategic points.

"The entire project of the past two years, thanks to federal funds, has been a great boon to advancement of forest work throughout this American territory. Hawaii's population and need for water is increasing rapidly. No better method exists for conservation of our water supply than by reforestation. We hope to widen the scope of our activities until every available bit of denuded land has been replanted so that in the coming years Hawaii's mountains will again be covered with a thick, life-giving forest growth and an adequate and safe supply of water is assured on all the islands of the Territory." - Pan-Pacific Press Bureau.

KLEBERG BILL ENDORSED

According to information received from Region 3, the International Association of Game, Fish and Conservation Commissioners on September 1 adopted the following resolution:

"WHEREAS, there was introduced in the House of Representatives a bill H.R. 12498 known as the Kleberg Bill, having for its object the consolidation in the Department of Agriculture of all Federal activities relating to wildlife, and

"WHEREAS, the Kleberg or a similar bill in all probability will be re-introduced in the next congress, and

"WHEREAS, there is a deplorable and widespread division of Federal activities in various departments and bureaus causing costly duplication of efforts, now therefore be it

"RESOLVED, that the International Association of State Game, Fish and Conservation Commissioners does endorse the principles of the Kleberg Bill, subject however to the inclusion therein of the following provision:

"'Provided, however, nothing herein shall be construed to limit or restrict the lawful power and authority of the states'."

" AS WE GO PLANTING ON "

(Words & Music by State and Private Forestry, Washington)

The "Battle Hymn" has become the "Planting Hymn" and is being hummed by the forty States and two Territories which are actively engaged in cooperative tree-planting and distribution with the Forest Service under Section 4 of the Clarke-McNary Law.

Summary reports for Calendar Year 1935, issued by State and Private Forestry, show many soloists. New York carried the lead with 4,600,000 trees distributed, Georgia chimed in with 3,110,500 trees, Indiana rang out a true tenor with 2,866,400, and the solo quartet was completed by Puerto Rico with 1,658,400 trees. Pennsylvania, Florida, West Virginia, Ohio, Wisconsin and Nebraska furnished excellent close harmony, each distributing in excess of one million trees.

The entire choir sent out in excess of 26 million trees, a marked increase over the 20 million of 1934. Two new voices were admitted to the ensemble on July 1, 1935 from the States of Arkansas and Texas, which will undoubtedly swell the volume for 1936.

All of these trees were planted on farms, and included no ornamental or horticultural stock. In addition to these trees which were distributed by the States on cooperative projects with the Forest Service, slightly more than 7 million trees were sent out for planting on State lands and 16 million for planting on private lands other than farm areas, giving a total of over 49 million trees as the distribution from State nurseries for planting purposes in 1935.

YE EDITOR DISCOVERS

Hearings on Forest Service appropriations for the fiscal year 1938 were held before the Bureau of the Budget on October 2. The Budget representatives were Colonel Dasher and Messrs. Fassett and Stork, with Director Bell sitting in for the first hour, particularly during the showing of the movie which was especially prepared for the hearings and which portrayed the heavy and varied work load of the District Ranger and our method and procedure in planning and controlling the general work program.

Special attention was given this year to advance organization of the material for use at the Hearings, and all of the presentations were aided by a large number of carefully prepared charts and graphs.

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The report which the Forest Service prepared for the National Resources Board in 1934 has finally been printed. It is part VIII of the supplementary report of the land planning committee, most of the other parts of which have already been received.

Part VIII is of interest chiefly for the dot maps compiled from the individual county land planning reports covering about half the land area and 80 percent of the forest area of the United States. A large part of the textual material of the report is adapted from the Copeland Report, but six of the fifteen sections are largely new material (Sections VI to XI, inclusive).

Sufficient copies have been sent to the field for distribution to Forest Supervisors. Plans have been made to send copies to the forestry schools, and there is a small reserve supply to fill special requests. For the most part, however, Forest Officers desiring personal copies or outsiders desiring copies should be referred to the Government Printing Office, where copies are on sale for $.50.

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Region 7 reports that when Governor Kump of West Virginia and Congressman Jennings Randolph recently met President Roosevelt at Thomas, West Virginia, they told him what they knew of the work and problems of the Monongahela National Forest, what the Forest means to the State, and what Forest Supervisor Wood is doing. As a result, President Roosevelt asked to meet Supervisor Wood, and a meeting was arranged. In talking with Mr. Wood, the President seemed much interested in the work of the Forest, particularly in the fire situation.

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The following is a report by months, from November 1935 through July 1936, of frequency rates per thousand men, of Lost-Time and Fatal Accidents for our CCC camps. These figures include National Forest Camps, State and Private Camps and some B.A.I. Camps:

November 1935	8.5	March 1936	9.2
December 1935	9.5	April 1936	7.8
January 1936	10.0	May 1936	7.1
February 1936	10.0	June 1936	8.3
		July 1936	7.9

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According to the Press, Senator Robert D. Carey of Wyoming has written Secretary Ickes expressing dissatisfaction with the administration of the Taylor Grazing Act and asking that the law be administered more "expeditiously and satisfactorily."

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In a recent news release Region 6 says:

"The Pacific Northwest is steadily becoming the woodlot of the Nation, as shown by a lumber 'flow map' for 1934 recently completed by the Pacific Northwest Forest Experiment Station. In nearly every section of the country lumber from Washington and Oregon is claiming a larger share of the consumers' market, and notably in the New England, Middle Atlantic and Lake States, and farm states of the western Mississippi Valley, has in the past decade definitely outstripped its nearest rival, Southern Pine."

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The Carnegie Institution of Washington has published a booklet entitled "Environment and Life in the Great Plains" by Dr. Frederic E. Clements and Dr. Ralph W. Chaney. It takes up the geological and man-made history of the region and presents an excellent discussion of the problems of readjusted utilization.

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Region 6 reports that about 42 miles more of the proposed "Cascade Crest Trail" in Washington will be completed this season if weather in the high mountains permits. Of this high trail some 127 miles already have been constructed out of a total of 531 miles required in the State of Washington. The proposed trail will follow the high rim of the Washington Cascade range and will constitute the northern unit of a skyline route along the summit of the Cascade and Sierra mountains all the way from Canada to the Mexican border. When completed, this trail, particularly the Washington section of it, will be one of the outstanding tourist and recreational attractions of the United States. Starting at "Monument 78" on the Canadian boundary, it reaches the Columbia just east of Wind River, Washington. It extends through five National Forests of the State.

The trail will be approximately three feet wide and will be intended for parties of hikers and horseback expeditions. It is proposed to include along the route a minimum of artificial refinements which would threaten the wilderness charm.

The mountain districts made available by the trail will include the rugged and wild crags of the North Cascade Primitive Area stretching from the Canadian boundary to the vicinity of Harts Pass; the Glacier Peak area outstanding for its combination of spectacular snow peaks and exquisite alpine meadows and lakes; the section from Stevens Pass to Snoqualmie Pass, closely approaching the Glacier Peak area in ruggedness and sheer beauty;

and the section from Snoqualmie Pass south which includes long stretches of timber and mountain meadows in the vicinity of Mount Rainier, the famous Goat Rocks area and majestic Mount Adams.

The Cascade Crest Trail will require several years for completion. The Skyline trail in Oregon which is a continuation of the Washington trail already has been completed.

THE DROUTH AND SHELTERBELT

By Lee Kirby, Tonto

I have just completed a 4,000 mile trip over the range areas in western North and South Dakota. There is no way of conveying an understandable word picture of conditions; but it is sufficient to say that through a combination of continued and excessive overstocking, drouth and grasshoppers, the grass lands have been made to appear as though a concrete polishing machine had been run over them. There have been very few actual losses of stock from starvation because they were shipped out by train and by truck. In spite of the present deplorable condition, however, these grazing lands are not ruined by any means. With conservative stocking and reasonably good management (and some normal rainy seasons) they can be brought back.

As to the Shelterbelt, I was amazed at the success these men have had. This has gradually developed more toward farm forestry with shelter plantings around the buildings on thousands of farms. Those that I saw represented better than 80 percent survival of the 1935 plantings. Seeing is believing; and, when it is considered that this was accomplished in two of the worst drouth years this part of the country ever had, under the trying handicaps of emergency work setups and that it was a new venture on a large scale, it is easy to see that with the experience already gained, an opportunity to plan well ahead, money to hire regular crews and to work them continuously, they could in years of normal rainfall make a far better showing. Farm people are becoming genuinely interested and are putting out real efforts to take care of the trees on their places. Public sentiment is changing from indifference or opposition to support. This support, I think, will become more enthusiastic within another year or two after the thousands of plantings emerge from their hiding and attain a height growth that will make them noticeable.

These men who have pioneered this project are truly deserving of great credit for carrying through to the point of proven feasibility in the midst of many physical and human discouragements. - R. 3 Bulletin

32,500 SPECIMENS NOW IN YALE'S COLLECTIONS OF WOODS OF THE WORLD

The Yale wood collections now contain over 32,500 specimens, representing more than 10,400 named species of 2,548 genera and 225 families. The additions during the last two years alone almost equalled the total number of specimens on hand a decade ago.

The most outstanding addition made to the collections was secured as a result of the visit of Professor Samuel J. Record to Holland. This consisted of a gift to Yale by the Commercial Museum of the Colonial Institute at Amsterdam of 2,215 Javanese wood specimens collected with herbarium material by Koorders during the years 1888-1894. This material was studied for more than 30 years by [illegible] Janssonius of Holland, and the results of his work were published in six volumes.

One of Professor Record's major projects has been the study of timbers of British Honduras. The work was begun ten years ago in cooperation with the forestry department of the Colony and with the Field Museum of Natural History. Professor Record collaborated in the authorship of a volume on this subject, published this year by the museum. - Yale University News Release

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 23 Washington, D. C. November 9, 1936

LABORATORY SYSTEM PROMINENT AMONG HOUSE PREFABRICATION SCHEMES

In the quest for more, better, and cheaper houses for millions of Americans, a distinct need has been felt for a prefabricated type of housing, in which much of the material can be put together in standard factory-made parts by mass-production methods, to be followed by speedy and efficient erection on the site.

That wood may be as readily adapted to such a system as other materials has been demonstrated in the system of all-wood prefabricated house construction developed by the Forest Service at the Forest Products Laboratory. Houses constructed experimentally there are built up of prefabricated wood unit panels four feet in width and up to 15 feet in length. All panels utilize the "stressed covering" principle, long used in aircraft construction to combine strength, rigidity, and lightness; that is, plywood sheets forming the panel faces are glued with moisture-resisting glue to both sides of the structural framing, thus becoming a definite part of the load carrying system instead of being an additional load on the supports as in ordinary construction. In this way the framing members can be materially lightened without any sacrifice of strength or rigidity. Joists, for instance, have been reduced in height from the conventional 10 inches to 6 inches.

The outer wall panels, by utilizing effectively the strength of the exterior and interior plywood, are 2¼ inches thick instead of the customary wall thickness of 6 to 8 inches. Secure but easy-fitting joints are provided by upright mullions with double grooves to receive the edges of the inner and outer plywood. All panels are insulated; the wall, roof, and lower floor panels primarily against heat and cold, and the partitions and floor panels between stories against sound. All necessary electrical wiring and outlets for servicing the house can be built into the units. The entire system is being developed with a view to quick and ready assembly on the site.

Alternative to the softwood plywood coverings on the standard panels, hardwood finish surfaces can be applied to both floor and wall panels on the interior and paint can be used on walls or ceilings.

The first experimental prefabricated house developed at the Forest Products Laboratory was a one-story structure with a flat roof and casement windows. The most recent work on the project has been the development of units which make the Laboratory's system of prefabrication adaptable to the erection of houses of conventional appearance with two-full stories, pitched roofs, and double-hung windows.

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The fact that the system utilizes standard parts does not mean that any two houses so built must be identical in design and appearance. By interchanging various units, different conditions can be met. The use of standard factory-made parts does not mean "standard" houses identical in every part. Prefabricated houses of widely different designs can be built with the same standard panels, provided a few minor changes are made. Industrialization of all-wood housing would substitute prefabricated wall, floor, and roof panels of wood for the rough materials, timbers, sheathing, siding, rafters, lath, and plaster.

Although houses produced according to the Laboratory's system of prefabrication are not in large-scale production at the present time the principles have been adapted in the rapid erection of low-cost houses, and it is understood that a number of manufacturers are preparing to launch production of the essential units and the development of accompanying plan services. - Forest Products Laboratory

ONWARD, UNIFORMS!

The Uniform Committee has gone another step forward in its endeavor to select for the Service clothes which express cordiality, friendliness, and the outdoor life a forester is ordinarily pictured as living. Upon the recommendation of ESQUIRE - - the leading authority on men's wear in this country - - the Strong Hewat fabric now specified for Forest Service field clothes was adopted. Now a hard-woven fabric for rough wear known as "elastique", in our heather green color to be exclusive with the Forest Service, will be permitted on an optional basis for riding breeches and trousers only. The latter is inappropriate for an American Forester's use in coats, being too heavy, airtight, and harsh appearing. A "non-harsh appearing" but closely woven coat material will be announced as soon as selected.

Pointed remarks by President Roosevelt on an occasion in late 1934, when Under-Secretary Tugwell visited Warm Springs, indicated he was critical of the personal appearance of Forest Officers in the field even though keenly interested in forestry and the work of the Service. Shortly thereafter, a committee composed of men having long and wide experience with field conditions - E. A. Sherman, Chairman, Wm. R. Chapline, J. A. Fitzwater, E. W. Loveridge, John D. Guthrie, A. G. Ringland, and R. M. Evans, - was appointed which had for its goal a uniform with harmony between the colors of suits, shirts, neckties, etc.; a uniform exuding distinctiveness and exclusiveness; a uniform which would express the woodland work the men were engaged upon; a uniform appropriate both from a psychological and utilitarian standpoint.

Early in its work the committee realized it would be impossible to please everybody. The desires of the men, ranging from no uniform at all to one as flashy as that of the Canadian "Mounties", indicated a tough job. Imagine selecting a hat for your wife and compare that minor difficulty with that of pleasing all Forest Service men at the same time!

In view of the touchy nature of the subject, each step was taken deliberately. Professional advice was sought. Samples were made and passed in review on the committee's parading grounds. Photographs of possibilities were sent to the Regional Foresters, Division Chiefs, and Directors of Experiment Stations. Large numbers of various shapes and colors of hats were scrutinized carefully, while the committeemen bore in mind the necessity to keep it suitable for the job and attractive - - yet not too attractive. The female tendency to snuggle up and have its picture taken alongside a uniform and thus interfering with serious work must not be encouraged by a ravishing hat. A too-attractive hat warranting early and widespread adoption by the general public, thereby losing that highly desirable distinctiveness, was likewise not wanted. Utility and fitness for the job, however, were paramount considerations.

The problem of scrapping present Service clothes gradually and supplanting them with the new was as bad as deciding just when the uniform should be worn. Its use in large offices and cities, except incidental to travel, was to be frowned upon.

The September 30 deadline for the fulfillment of the order that all regular authorized Forest Service employees must wear Forest Service field clothes has been waived until further notice. - Armella Friedl

SHORT-WAVE RADIO HAS GOOD RECORD IN WOODS

The much-questioned efficacy of short-wave radio for emergency communication in mountainous territory was demonstrated during the past summer in Region 1.

The Regional network, established as an essential in forest-fire control, handled 2,700 communication contacts with a reliability rating of 97½ percent of perfect, based on messages reaching their destinations from the sending stations without being relayed.

This noteworthy record was established in the face of the most difficult communication conditions, geographically, and in all sorts of weather.

Geographic and technical conditions require centering the network at Missoula, Montana.

The net was in operation this year for 92 days, June 15 to October 2. During that period, the use of radio was necessary at 19 different fires. Most of the sets are held in reserve at Missoula, to be sent out to the fires as needs arise. The calls came from seven different Forests and Glacier National Park. The Lewis and Clark National Forest had the largest number of fires requiring radio service, six, and made use of nine sets.

Twenty different operators were used at different times throughout the summer, gaining field communication experience. They are Federally licensed amateur operators, taken from a list of those residents of the territory who had expressed willingness to respond to summons for emergency fire duty.

Although the Regional reliability average was 97½ percent, there were four National Forests - the Nezperce, Kaniksu, Flathead, and Helena - which maintained perfect ratings.

The area covered by this short-wave radio service extends over all of Montana, Idaho north of the Salmon River, and northeastern Washington. Extensive portions of this area are extremely rough and isolated, without wire communication or adequate emergency transportation facilities. In these places, radio is the only means of speedy contact with headquarters, and speed in communication is one of the essentials in fire control. - R.-1 News Release

THE CCC AT THE FOREST FESTIVAL

By R. S. Monohan, R-7

Robert E. Fechner, Director of Emergency Conservation Work, was justly proud of the active part the CCC took in the annual Mountain State Forest Festival which opened on October 1, directly following the Central States Forestry Congress, at Elkins, West Virginia, headquarters of the Monongahela National Forest. Floats originated, planned, and arranged by CCC enrollees for the parade on October 2 included one showing a discouraged boy standing at the entrance of a tent enrolling in the CCC. He was ragged, unkempt, with a week's growth of beard on a dirty face. Under a sign, "Honorable Discharge", on the other side of the tent, stood a well-groomed, bright, young boy, full of confidence, dressed in spotless khaki, trained and prepared to take his place in the world.

Out from under the very noses of seasoned woodsmen, a young CCC boy snatched first prize in the log-chopping contest. The same versatile lad won the rug-making and embroidery prizes.

West Virginia was proud of the CCC and enthusiastic toward Emergency Conservation Work. Six new State Parks have emerged in this State where, prior to the launching of the ECW program in 1933, not a single State Park was to be found. The CCC has furthered forest, water, and wildlife conservation which makes West Virginia "a State second to none in beautiful mountain country and public recreational areas."

Robert E. Fechner; Arno Cammerer, Director of National Park Service; Fred Morrell, Assistant Chief in Charge of ECW; and R. M. Evans, Regional Forester of Region 7, in whose honor this year's program was dedicated, were among the many distinguished guests attending the Festival. President Roosevelt offered his congratulations and assured his continued cooperation in this work.

TALKING ON YOUR FEET

By John M. Garth, in "American Business and System," October 1935
(Condensed, garbled and reported from the above-described article by Wilfred W. White, R. 1)

I. Before You Get up to Speak

A. General Plan of Talk

(1) Outline and learn your chief facts and arrange them in your mind in logical sequence.

(2) Prepare and learn illustrations, incidents or examples to dramatize, support and prove the statements you make.

(3) Plan an opening which can be tacked on to something the previous speaker may have said, or which can be tied to the chairman's remarks in introducing you.

(4) Eliminate bromides such as, "The mills of the gods grind slowly"; "There's something rotten in Denmark," or "Keep thy shop and thy shop will keep thee."

(5) Plan some stunt or method to make your talk different from your predecessor's. Speak from a different location on the platform. Ask the audience to move up closer or walk down into the audience.

(6) Bring yourself down to the level of your audience. Be friendly. Forget formalities. Talk in the language of 1935.

(7) Dig for specific facts; avoid generalities; mention names; draw on known sources; cite authorities. Never say "Someone said" and "I am not sure of the exact quotation."

(8) Not only prepare, but practice. Some high-powered organizations have at least two rehearsals before each meeting. That is, each executive delivers his speech at least twice in rehearsal.

B. Plan Beginning

Meetings cost money. Speakers should not waste time in alibis, and wondering audibly why they were asked to speak. Get going.

The speaker can lose the audience quickly in a floundering start.

One successful speaker always plans to begin his talk with a surprise, by:

(1) Taking different place to stand from previous speaker, such as to one side of the stage, step down off rostrum, etc.

(2) Informal, if previous speaker formal. Eliminate "Mr. Chairman, ladies and gentlemen." Begin.

(3) Mention name of well-known member of audience. Hang a humorous story on some member of the audience.

(4) Shake hands with, rather than shake fist at, audience. Begin in friendly fashion rather than in a belligerent manner.

(5) Begin with something everyone agrees on and then work into the controversial.

(6) Another surprise that puts audience in right mood. Speaker promises to do something hard and then does it. Illustration: "I will show you something never before seen by the human eye and make it disappear never to be seen again by human eye." Then take peanut from pocket, break shell, show nut and eat it. (This is for only a limited few that can get away with it.)

C. Plan the Ending

Most important of all, quit on time. Quit sharply - with a surprise. Quit with a strong point. Quit with a constructive idea that leaves the audience wanting to do it. Don't promise to quit and talk about quitting. Do it.

II. Before You Sit Down

(a) Change your pace and tempo; vary your tone of voice, volume and pitch; vary the speed at which you are talking. Stop once or twice for an extemporaneous idea. Grow confidential a few moments during talk.

(b) Move around; walk to the end of the rostrum. But don't pace monotonously like a wild animal in a cage or some old coot taking his constitutional. Move up closer to the audience; ask listeners in back rows if they can hear you. Show your audience you are interested in them.

(c) Suggest some plan of action - be concrete and specific; leave your hearers with a resolution to take some action on your suggestions.

(d) Explain, illustrate, dramatize, visualize, but don't repeat your important points.

(e) Save some big point for near the end of your talk; offer it as a climax, as a picture of the future, or as a result of your suggestions.

(f) Don't lead up to your close. Don't say, "and now in closing." Go ahead and close, give the audience a surprise.

(g) End on a high but friendly note; do not wobble up to a slow, apologetic finish. Take less time than allotted on the program. - From R-1 Bulletin

ABRASIVES USED IN SCARIFYING FOREST TREE SEEDS

Scarification of hard coated seeds, to hasten germination, has been a common practice for many years. Up to now, however, most of this work has been done by farmers with seeds of clover, lespedeza and other legumes. For this purpose, either the "Barrel" or "Ames" scarifiers are satisfactory. In the "Barrel Scarifier" stream bottom gravel is used as an abrasive, and in the "Ames" machine the seeds are blown against emery cloth or paper for a very short period of time. It has been reported also that hard coated seeds of legumes, lettuce, mustard, okra, and snapdragon can be made to germinate more quickly by being blown against needle points.

Forest tree seeds, such as those of juniper and hawthorn, need a much severer treatment, however. In connection with its seed studies, the Lake States Forest Experiment Station has developed a revolving drum scarifier (9 inches wide by 3 feet in diameter) operating at a speed of about 40 to 45 R.P.M. The efficiency of the following abrasives was tested:

1. Crushed quartz of two grades, fine and coarse. Four tin baffles were spaced at regular intervals around the inside of the drum. The volume of quartz to seed was 2 to 1.

2. Number 12 aluminum oxide grit. The baffles were also used in this test. The ratio of abrasive to seed was the same as above.
3. Six silicon carbide blocks (9 inches by 2 inches by 1 inch) were substituted for the baffles.
4. The drum was lined with No. 2½, grade 30 E, garnet paper.
5. The drum was lined with No. 2½, grade 30 E, silicon carbide paper.

The only abrasive which proved to be of practical value was the silicon carbide paper. In the machine described above, satisfactory scarification of two pounds of juniper seeds was obtained in three days.

At the Station's North Dakota branch a larger, but otherwise similar machine (2 feet wide and three feet in diameter with a speed of 20 to 30 R.P.M.) has demonstrated that scarification of forest tree seeds can be done on a commercial scale. The Denbigh scarifier with certain refinements will satisfactorily scarify 20 pounds of juniper seed in two to four days - Technical Note, Lake State For. Expt. Sta.

YE EDITOR DISCOVERS

The following policy covering the use of wood in Forest Service structures has been approved and should be followed in deciding on materials to be used:

"A function of the Forest Service is to foster not only the production but also the use of wood. From a utilization standpoint our aims go beyond the reduction of waste and the increase in usefulness and value of wood products. We aim to insure the permanent place of wood in our modern economy, and thus give incentive and reality to a nation-wide program of forestry by which lands otherwise idle can be made a source of wealth and employment.

"The Forest Service in its own construction work should use wood to the fullest practicable degree. The use of other materials in lieu of wood should be considered and authorized only when their suitability and durability clearly exceed that of wood, or where the use of such substitute materials is made necessary by the general type or design of the structure, or where the first cost plus maintenance cost of wood would so greatly exceed the first cost plus maintenance of other materials that it cannot be justified on any demonstrational or economical basis."

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Under a research grant to Dr. Edwin C. Jahn, Professor of Forestry and Wood Utilization at the University of Idaho School of Forestry, investigation on the measurement of gelatinization of cellulose and wood is getting under way, according to a news release issued by the University. The grant comes from the Technical Association of the Pulp and Paper Industry. "If it is found possible to economically change wood to the jelly-like form and produce a material which may be formed and molded into hard, strong products, a marked advance will be made in the field of wood utilization," says Dean D. S. Jeffers of the School of Forestry.

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Under provisions of the Acts of March 1, 1911, and June 7, 1924, 10,789,535 acres of land have been acquired for National Forest purposes to June 30, 1936.

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Almost half of the 2,090 CCC camps to be operated during the eighth Emergency Conservation Work period, which began on October 1, will be distributed in National, State and Private Forests, 1,505 camps have been assigned to the Department of Agriculture, 507 to the Department of the Interior, and the remaining camps will be supervised by the War Department.

The 1,505 Department of Agriculture camps have been distributed as follows: 483 to National Forests, 284 to State Forests, 169 to private forests, 451 to Soil Conservation projects, 46 to drainage control projects, 23 to wildlife projects, 26 to TVA reforestation projects, 13 to mosquito control projects, 3 to Oregon Land Grant projects, 3 on Naval Reservations, 5 under the supervision of the Bureau of Animal Industry, and 2 under the supervision of the Bureau of Plant Industry.

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A revision of the FORESTRY HANDBOOK FOR CALIFORNIA has recently been issued by Region 5 in cooperation with the California State Chamber of Commerce. This bulletin has been recommended for use in the public schools by Vierling Kersey, State Superintendent of Public Instruction, and copies have been sent by Region 5 to California Superintendents of Schools for distribution to teachers who receive the Science Guide for Elementary Schools.

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There were 197,230 persons engaged on work under the jurisdiction of the Forest Service during the month of September. Of these 165,754 were paid from ECW emergency funds; 23,817 were paid from 1935-36 ERA act funds; 2,192 fire fighters and guards were paid from other than emergency funds; 2,138 regular seasonal fire guards were paid from regular appropriations; 3,329 were regularly appointed personnel. There are almost sixty times as many temporary workers as there are regularly appointed personnel.

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The latest news of our old friend A. C. "Ring" Ringland who deserted the Forest Service last spring and went over to the Soil Conservation Service is his appointment as Special Assistant to the Chief of the Soil Conservation Service. Congratulations, Ring!

PROFESSORSHIP IN WILD LAND USE ESTABLISHED AT MICHIGAN

Lee Roy Schoenmann has been appointed professor of Wild Land Utilization at the University of Michigan's School of Forestry and Conservation. Funds for the new professorship were furnished from the Pack Forestry Trust, established by Charles Lathrop Pack. It represents an expansion of the activities of the George Willis Pack Forestry Foundation and is another step in the University's general program of research into all phases of scientific land use.

Mr. Schoenmann is at present supervisor of agricultural land classification in the Tennessee Valley Authority. He is a graduate of the University of Wisconsin, as for eight years director of the Michigan Land Economic Survey, and was in charge of the organization and administration of the State CCC forest camps in Michigan.

The Institute of Public and Social Administration of the Graduate School has appointed Carl F. Behrens as research assistant to the Committee on Land Utilization, of which Professor W. F. Ramsdell, George Willis Pack Professor of Forest Land Management, is chairman. Mr. Behrens is a graduate of Michigan State College and Iowa State College and is especially interested in land economics. - From University of Michigan News Release

FOREST FUND GRANT TO REACH £500,000 FOR BRITISH LANDS

To aid the Forestry Commission in its task of planting about 565,000 acres in England and Scotland with trees, the Forestry Fund government grant is to be increased by £50,000 to £500,000, it has been announced by Mr. Neville Chamberlain, Chancellor of the Exchequer.

The commission has already planted 500,000,000 trees in about half the 565,000 acres.

The aim now is to plant 30,000 acres a year, the bulk of which will be with soft woods. In addition, the commission has set itself the task, spread over ten years, of acquiring and laying out 200,000 acres within a radius of 15 miles from certain special areas.

Apart from the value of this planting in the future, it will afford employment to more than 2000 persons a year, and, indirectly, to a number more engaged in the tools and wire netting trades. The scheme will cost about £3,000,000.

Another "by-product" of the Forestry Commission's work is that of land settlement on a small scale. Up to date 1250 men and their families have been settled on forest holdings. These men are guaranteed work on a minimum of 150 days in the year and are given a house with a piece of land.

Starting from "bed-rock", practically all these families have made good and now own their own poultry, sheep, pigs and cows. By the time the special areas scheme has come to fruition, it will mean that a thousand more such holdings will have been established. - Christian Science Monitor.

FOUR NEW NATIONAL FORESTS IN TEXAS

Four National Forests for Texas, the Sam Houston, the Sabine, the Angelina and the Davy Crockett were created by presidential proclamation on October 15. These National Forests will be administered by Forest Supervisor L. L. Bishop at Houston, Texas.

The Sam Houston National Forest contains 491,800 acres gross area in Montgomery, Walker and San Jacinto counties. About 148,000 acres of this area have already been approved for purchase by the National Forest Reservation Commission. The Sabine National Forest includes about 439,600 acres in Sabine, Shelby and San Augustine counties and is next to the Louisiana boundary, on the watershed of the Sabine River. Almost half of the Sabine National Forest is already under Federal administration. The Angelina National Forest contains 388,700 acres in Angelina, Jasper, San Augustine and Nacogdoches Counties. Approximately 135,000 acres of this are now under the administration of the Forest Service. The Davy Crockett National Forest is in Houston and Trinity Counties. It covers a gross area of 394,200 acres, of which 165,000 are now under control of the Government.

About 85 percent of the area of these National Forests consist of cut-over stands of pines and hardwoods. All the lands lie well within the Southern pine belt where trees grow rapidly into commercial-size timber. Nearly 300,000 acres have some timber already of commercial size. The virgin stands in the region average 50 to 100 feet in height, but active lumbering has wiped out most of the big timber and there has been a rapid decline in lumber production during recent years. - From R-7 News Release

LAND RECLAMATION UNDER WAY IN GERMANY

Reclamation projects now under way in Germany cover an area of approximately 3,000,000 acres, according to a report to the Foreign Agricultural Service of the Bureau of Agricultural Economics from Agricultural Attache L. V. Steere in Berlin. Within the next two years it is expected that approximately 600,000 acres of that area will be available for the production of food.

One of the most important tasks on which the Government is working is to make secure the nutritive self-sufficiency of the nation. Hence the fertility of the soil is being improved, yields are being increased by improved soil preparation and better crop rotation, the improvement and cultivation of waste land is being promoted, and new land is being reclaimed from the sea. - From Press Service Release

SERVICE BULLETIN

CONTENTS CONFIDENTIAL

WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT ××× THE TIME HAS COME FOR A CHANGE AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY ×××× TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER

Theodore Roosevelt

Vol. XX No. 24 Washington, D. C. November 23, 1936

THE FOREST ADVISORY COMMITTEE OF SANTA BARBARA COUNTY

By S. A. Nash - Boulden, Santa Barbara

The interrelationship of the Forest Service and various county organizations dealing with agricultural matters has been given a great deal of attention in Region 5. The Forest Service has its roots in land use problems, and farm advisors, farm bureaus, and agricultural commissioners meet with us on problems of common interest. There are also many other groups that have a keen interest in the National Forests - hunting and fishing clubs, associated camping groups, stockmen's associations, etc., and, overshadowing all, finally the large body of those who look to the National Forests to furnish and safeguard the water for their homes and farms.

The Santa Barbara National Forest Officers have dealt individually with all these groups. They have found that in the majority of cases interests are parallel, but they have had to work out the problems so that the "greatest good is to the greatest number" and conflicts are avoided. This, as every Forest Supervisor knows, is a normal routine and not at all unusual; in fact, it is done every day.

Discussing things with individual groups or people takes time, and as so many have problems (or fights) to take up with the Forest Supervisor that border on common ground, it was decided: Why not get all the heads together? Surely interests of campers and hunters overlap just as do the concerns of stockmen and the farm bureau.

Invitations were sent out and a picnic was held at a reasonably central spot. Attended by 150 people from as many different county organizations as the farm advisor could think of, the party was a grand success. Talks by "key-men" representing certain groups were made, and each speaker stressed the usefulness of this method of informal meeting. At the end, the Supervisor launched an idea that was enthusiastically received -- that each group represented send a delegate to another meeting, at which time a committee would be formed to serve as a clearing-house for all the individual troubles of each organization.

And so it was that the Forest Advisory Committee of Santa Barbara County was born. Three meetings of the committee have been held during the last five months, usually at lunch time, and each has shown progress in sifting the wheat from the chaff of petty grievances. At each meeting Forest Service representatives urge the desirability of keeping the FAC clear of personal grievances, that committeemen bring only the consensus of their group's opinion or wishes; not John Smith's ideas, but what John Smith's lodge, bureau, legion, or sportsman's club wants and why.

It is working out very well. If we are undecided as to the opening of a stretch of fire road and its reaction on the public, or if it is a question of setting aside a mountain glade for cabin sites or for use as a public camp and picnic ground, why that's what the FAC is for! It's their job to give us an expression of their group's opinion, and they do.

Altogether the Santa Barbara finds it a most useful and entertaining idea. The members of the FAC are each leaders in their group and are accustomed to handling mass opinion and focusing it down where possible to one point of attack or question. We tell them our plans and why -- they tell us theirs, and you would be surprised how frank people can be when seated round a table eating!

We contemplate forming similar committees in the other counties within the Santa Barbara National Forest.

HIGHLIGHTS OF THE BUDAPEST FORESTRY CONGRESS

By John D. Guthrie, Washington

The Second International Forestry Congress was held at Budapest, Hungary, from September 10 to 17, 1936. Between 35 and 40 nations and dependencies were represented. In addition, delegates were present from five related international bodies such as the Institute of Agriculture, Committee on Wood (C.I.B.), Wood Gas, Travel Bureau, and Union of Forest Research Stations. The estimated number of delegates of various classes was 525, of which 14 were Americans. The heads of many of the forest services of Europe were present, including Sir Roy Robinson of the British Forestry Commission, Dr. E. D. Van Dissel, head of the Dutch Forest Service, and our own chief, F. A. Silcox.

Baron Clement Waldbott of Hungary was President of the Congress and the four Vice-Presidents were: Baron von Keudell, Director-General of German Forests; Sir Roy Robinson, Chairman, British Forestry Commission; Mr. F. A. Silcox, Chief, U. S. Forest Service, and M. Chaplain, Director General of the French Forest Service.

Mr. Silcox, among other nationals, made an address at the opening session, served on the Executive Committee, and took an active part in the deliberations of the Congress. Zon was selected as "rapporteur" (secretary) of the meetings of Section V, Wood Technology, and Guthrie as Vice-Chairman of Section II, Forest Management.

The correct list of Americans attending the Congress was given in the Service Bulletin of August 3, 1936, with the exception that Messrs. T. R. C. Wilson, Hugh P. Baker, and Barrington Moore were not present but Dr. H. I. Baldwin, N. H., and Julian F. McGowin, Smith Lumber Co., Chapman, Ala., did attend.

The Congress was preceded by a meeting of the International Union of Forest Research Stations to which Dr. Raphael Zon was the American delegate. The Congress opened with a meeting of all delegates. This was followed by meetings and deliberations of the 9 Sections which met simultaneously. There was a general closing session when the resolutions (32 in number) were acted on.

In contrast to the Rome Congress of 1926, no formal reports or papers were read but printed copies of all papers were available to all delegates on the first day of the Congress.

The number of delegates per country varied greatly. Several countries had only one, while some nearby nations had as many as 25 or 30. Chile, Brazil, and the Argentine were the only South American countries represented, and there were no delegates present from Canada, Mexico, Russia, or Japan.

French and Hungarian were the official languages, but interpreters were available at all Section and General meetings, though it must be said that the "English" of some of these interpreters sounded more like a foreign language!

Certain definite and important decisions were taken by the Congress. Among these were:

1. A permanent organization or committee was set up.
2. This is made up of one official or government representative from each interested nation.
3. The permanent headquarters of this committee or permanent organization would be in Rome, with the International Institute of Agriculture.
4. That annual or periodic meetings of this committee would be held not in Rome but in the various member countries.

Invitations for the next Congress were received from France, to be held in Paris in 1937, in connection with its International Exposition of Wood; and from Finland at Helsinki (Helsingfors) in 1940.

On the social side there was much activity. A formal reception to the delegates by the Regent of Hungary, Admiral Nicolas Horthy in the Royal Palace; formal dinners to the heads of the different delegations by Minister of Agriculture Daranyi, by Baron Clement Waldbott, President of the Congress, and by Dr. Cajander, head of the Finnish Delegation; the last was followed by a musicale at the Finnish Embassy.

There were several field trips participated in by the Americans; one to Lake Balaton, with its summer home development, and a 3-day trip to several forests, two government tourist resort hotels (built and managed by the Hungarian Forest Service), the Plains, the country of Hortobagy, cattle and horse raising region of Hungary. After the Budapest meeting most of the Americans visited forests and forest properties in Czechoslovakia, Austria, and Germany under the auspices of the Oberlaender Foundation.

The city of Budapest proved to be of great interest to all delegates. It is a beautiful and historic city, lying on each side of the Danube (which is not as blue as one had believed), and the hospitality of the Hungarians was outstanding.

DANISH ECOLOGIST QUESTIONS WORK OF HEATH SOCIETY

By Lincoln Ellison, Northern Rocky Mt. For. Expt. Sta.

The article in the Service Bulletin of September 28 about the journey of Mr. Silcox and Mr. Rachford to Jutland, and the work they saw of the Danish Heath Society brings to mind some paragraphs by the widely known Danish ecologist, C. Raunkiaer, on the same subject, but with a different viewpoint. I quote them because they bear rather directly on some of our own problems of conservation and because there is a prevalent and possibly unwise tendency to push in this country the introduction of exotic species. These paragraphs occur in the forepart of Dr. Raunkiaer's paper "Statistical Investigations of the Plant Formations of Skagens Odde."

"This disaster (i.e., disappearance of the heath) may actually take place. Many people make their living, at any rate in part, out of the dogma 'Where plough can't go, there trees shall grow'. The State assists them to make their living out of this dogma, and year by year the areas of heath in Jutland diminish. Heaths are afforested where afforestation will be profitable; but planting of trees takes place on some heaths where there is no prospect whatever of profit.

"When the Heath Society began its activities West Jutland was almost without woodland. There were, on the other hand, vast expanses of heath. It is easy to understand how the peasant of West Jutland could be persuaded to agitate for the planting...of those heaths that could not be used for remunerative agriculture, if he were assured that their planting was a paying proposition. Neither do I doubt that even if each and all of the existing heaths had been obviously unfit for profitable cultivation or planting, yet many of the peasants would have favoured...a partial planting... Where there are no woods people long for them, and will give anything to get them. Of heath, on the other hand, there was such a superabundance that it was no difficult task to persuade people, on the spur of the moment, to put their strength into its entire extirpation. But circumstances have changed. Innumerable remunerative plantations are now scattered over West Jutland, and there are also large areas of heath not fit for cultivation, but on which, it is affirmed, planting could be made to pay. When all these areas are covered with trees I presume that the craving for woods, which is experienced by most of the West Jutlanders (and by myself), will be satisfied. But if these peasants, now that plantations are distributed over the whole of West Jutland, keep on planting areas which will not pay, they must be acting from lack of knowledge; they believe, in fact, that these plantations too can be made to pay.

"Conversations I have had with country people during my journeys through the heath areas of Jutland have confirmed me in this opinion. When I have tried to put in a good word for the preservation of at least part of the heath they have glibly told me that it is unreasonable to let the heath remain to no purpose when it can be transformed into useful woodland, while at the same time the country is adorned with delightful woods in the place of barren heathy wastes. And when I have told them that many of the plantations in the arid heathland will certainly never pay they would not believe me. When I have tried to appeal to the peasant's feelings and aesthetic sense by asking him whether he cannot see something beautiful in the 'desolate' heath, whether he cherishes no tender memories fondly intertwined with the barren heath, and whether he would really be willing to witness the entire disappearance of the heath, then I have learnt that the people of West Jutland do not really wish these heaths swept entirely away, but that they console themselves with the thought that the disappearance of the heaths lies in the remote future, and that some small areas of heath, which for one reason or another no one will trouble to cultivate or plant, will always be left intact. This belief is, however, incorrect, and even if it were right but little would be gained by the retention of such small areas of heath lying amidst plantations and fields. In the course of time they would become covered by a vegetation dominated by trees, or at any rate they would gradually change their character completely. Even if such changes did not take place, mere patches of heathland would from their very lack of size give an utterly inadequate idea of the limitless expanse of primeval heath.

"Even if the vaster expanses of heath have vanished, there still persist coherent areas large enough to demonstrate the original character of the heath. But if the present activities continue, and there is no prospect of them ceasing, the time will soon come when our great continuous tracts of heath must cease to exist. The efforts of the Heath Society to extirpate the heath show no signs of abating till they have far exceeded their previous attempts to justify their title-deeds. The name 'Heath Society' is misleading; as their object is to extirpate the heath, a better designation would be 'Anti-Heath Society'... How I wish there might exist an 'Anti-Heath Society' with the object of a real Heath Society, i.e. to preserve...areas of heath...large enough to enable our descendants to form a just idea of the appearance of a great part of Jutland during a long and rich period of our country's history, and also to be a living memorial enabling them to understand the loving descriptions and songs that their forefathers wrote in praise of the heaths of Jutland. If, on the other hand, we are not careful to preserve a considerable area of heath as a memorial, then I do not doubt that our descendants will censure us for our shortsightedness and lack of feeling."

TREES HONORING PENN

William Penn's birthday was fittingly celebrated on October 14 when Mayor Wilson of Philadelphia planted two oak seedlings in the Friends Meeting House yard at Fourth and Arch Streets in the heart of old Philadelphia. "Friends" who worship in the 200-year-old meeting house plan to restore a portion of "Penn's Woods" with descendants of trees that Penn himself knew.

One seedling came from the ancient Salem Oak in the Friends Burial Ground at Salem, New Jersey, the other from an acorn from an English oak tree at Penn's grave in Jordans, Buckinghamshire, England. The original forest which Penn saw when he landed 254 years ago must have included this area which is now being restored. - Allegheny For. Expt. Sta.

YE EDITOR DISCOVERS

Bids have been approved for the supplying of airplane service for the initial work in California on the project to test the use of airplanes equipped with bombs in retarding small fires until ground forces can reach them. Mr. James W. Allen has been appointed to devote full time to the project, which will be located for the winter in California and moved to Region 1 for the fire season of 1937. Experiments will be made looking to the dropping of liquids, explosives, and any other materials which may promise to serve the purpose well enough to justify the cost of using aircraft. The Madison Laboratory has undertaken to make a general search of the whole chemical field in the hope that chemicals other than those now used in fire foams can be found which will have a value greater than an equal weight of water.

Mr. Allen is a fully qualified pilot who comes to the Service from the Army Air Corps and who has had mechanical and other experience with the National Advisory Committee for Aeronautics.

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About thirty Project Leaders from the Forest Experiment Stations are in Washington attending a conference which was called to discuss questions of planning in Research and obtain the advice and assistance of Project Leaders on some proposed developments. Although the subjects are primarily of concern to the men engaged in Forest Management investigations, several men are attending from the Divisions of Forest Influences, Economics, Range Research, and Products.

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President Roosevelt has authorized the appointment of one junior assistant to technician, a newly created Civil Service position open only to Civilian Conservation Corps enrollees, to the technical supervisory staff of each of the 2,090 CCC camps now in operation. The new position was created by Executive Order Number 7195 to afford qualified enrollees an opportunity for promotion to better positions in the Civilian Conservation Corps organization.

Competitive Civil Service examinations were given in the CCC camps last summer, and approximately 15,000 enrollees passed the examinations. The position pays $85 a month. The junior assistants will carry on their duties under the direct supervision of skilled technical men, including graduate engineers, foresters, architects, and the like who supervise the camp work programs. The Forest Service will appoint approximately 1,000 CCC enrollees to these positions within the next few weeks.

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Mr. Harold G. Moulton, Technical Secretary of the National Fire Protection Association, has suggested that the Forest Committee of the NFPA take up the collection and dissemination of information on county and municipal fire prevention ordinances. Southern California, for example, has such urgent need for fire prevention measures that county boards have enacted drastic restrictions upon smoking and other forms of use of fire in wooded or brush covered watersheds.

The tendency toward county ordinances prohibiting smoking under certain conditions seems to be spreading and where such measures are under consideration the counties concerned would doubtless be glad to know about experiences elsewhere. Many other fire prevention measures are becoming increasingly the subject of municipal and county legislation. If Mr. Moulton's suggestion is adopted by the Forest Committee, Forest Officers and State fire control agencies will be called upon to aid in the collection of drafts of ordinances enacted or proposed.

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A name plate for the President was recently made, by Enrollee R. MacDonald of Quilcene ECW camp, F-19, Olympic National Forest, on his own time during evening class work. At his request it was forwarded through proper channels with the following statement:

"I want the President to accept this as an expression of the high regard and esteem in which he is held, not only by myself, but all of the young men in this camp; also, to thank him for the wonderful opportunities he has offered us in the establishment of the CCC's."

Director Fechner in his letter of acknowledgment to Mr. Morrell said, "This is certainly a beautiful piece of work and I have no doubt the President will be proud to receive it. I will personally present it to him on his return to Washington next week."

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Approval by the President of continued construction of 46 Recreational Demonstration Projects in 24 States, together with allocation of funds to defray operations until January 1, 1937, was recently announced in a press release by the National Park Service to which department these projects were transferred last August from the Resettlement Administration.

At the same time, full allotment of funds for a similar period was authorized for operation of the 42 Work Camp Projects which came under the jurisdiction of the National Park Service last December. The Recreational Demonstration Projects, all located on Federally owned lands, or thus to be acquired, are designed to supply out-of-door recreational areas and facilities for people of the lower income groups.

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Copy for the first issue of Fire Control Notes has been sent to Government Island for printing. Plans were made for such a medium for exchange of ideas at the fire meeting in Spokane last winter, but the actual issuance of the first number has been postponed from time to time. The Editor of this new publication says he hopes that contributions will be more plentiful in the future so as to enable Fire Control Notes to supply some real competition to the Service Bulletin. (But not too much - Ed.)

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"Game and wildlife fortunately are not long disturbed by roads," writes Regional Forester Buck, in an article in the Pacific Sportsman, which answered an editorial therein raising the question of what will become of the wildlife of the forests with the country crossed and crisscrossed with unnecessary roads. "Game animals are coming back in the East in greater numbers than existed in the virgin forest days. Evidently protection and ample forage are more important to them than roadless solitude. Forest fire, on the other hand, is the arch enemy of wildlife, as anyone who has followed in the track of a fire will agree."

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A study of recent site index curves for second-growth loblolly pine has been prepared as a progress report for use until the new site index curves for the Mid-Atlantic Region are presented in final form. This Technical Note No. 22 was prepared at the Appalachian Forest Experiment Station by A. L. MacKinney, silviculturist.

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How do Forest Service radio sets compare with the latest equipment developed by other agencies?

The Service's radio men keep close check on current activities of commercial and government organizations, and as a matter of fact, enjoy cooperation from many of these agencies in exchanging notes and swapping helpful hints. Recently, an opportunity occurred to compare the Forest Service's Type "S" ultra-high frequency set with one performing a similar service for the Army Signal Corps. According to the data on the latter in the Army's instruction book, it performs about the same as does the "S". While no doubt ideal for Army purposes, the Radio Laboratory at Portland decided that it embodied several features which made it unfavorable for Forest Service use.

For one thing, the Army set requires special batteries obtainable only from one manufacturer, which presumably raises the battery cost. It is rather bulky and weighs almost twenty-five pounds compared to the "S" set's eight. A comparison of the estimated costs of the two sets gives another advantage to "S": the Forest Service set costs about $30, whereas the Signal Corps set represents an outlay of some $200. There is an extra tube in the Army set to provide for "channel" operation -- moving by fixed steps from one frequency to another instead of continuous tuning. This is desirable from a military standpoint but it is not of much use in Forest Service work.

Forest Service radiotricians found the telescope antenna on the Army set interesting and indicated that they could use it on vehicles -- provided it could be purchased at a reasonable price, which is doubtful. However, it folds into smaller space than does the fish pole antenna, now being considered for use with the "S", which has two features some Forest Service radio specialists do not like: the insulating material at the base of the antenna and its too-great length when telescoped together.

Anything new in portable and semi-portable equipment should be thoroughly investigated for useful ideas. The Radio Laboratory says that at the present time it is particularly interested in antennae for ultra-high frequency equipment.

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A letter from Robert Fechner, Director of Emergency Conservation Work, to President Roosevelt made public by the White House on October 27, says, in part, "I am calling the past record of the CCC, as well as the survey showing future work possibilities for such an organization, to your attention at this time becuase I desire to express my conviction that steps may well be taken to make the CCC a permanent organization. I, therefore, recommend that this program of conservation work among men and natural resources be adopted as a permenent part of our national governmental activities, the size and extent of the work to be governed by the dual factors of employment conditions among young men and the urgency of the conservation work to be accomplished."

"BILL" DURBIN

"Bill" Durbin died in a hospital in Sacramento, California, on October 31.

He was one of the diminishing group who entered forestry work in the old Bureau of Forestry before the transfer of the National Forests from the Department of the Interior, being a member of working plan parties in South Carolina and elsewhere. Sheer ability to get things done resulted in his rise to be Supervisor, first of the Modoc Forest and later of the Lassen Forest in California. His common sense and ready wit have left permanent marks in the make-up of the Forest Service, and many of the men whom he trained have had for him much the same affection and regard as were given to former Supervisor Shinn of the Sierra.

HUNTING COST DATA

An analysis of hunting cost data furnished by 226 of the 500 hunters who participated in the special deer hunt on the Cassia Division of the Minidoka National Forest during the period October 1 to 10, shows that the average expense per hunter amounted to $9.07, and the average expense per deer killed was $10.97. Total expenses borne by the 226 hunters are made up as follows:

Transportation	$454.34
Hotel, lodging and meals	46.30
Equipment	806.92
Horse hire	27.00
Incidentals	38.78
Special hunting license & deer tag	678.00
Total	$2,051.34

These hunters spent an average of 2.2 days on the hunt, including time going and coming, and bagged 103 bucks and 84 does.

The above figures were furnished by approximately 45 percent of the total number of hunters who entered the Forest for this hunt, and it may be correctly assumed that the remaining 274 hunters likewise incurred an average expense of $9.07, making the total expenses for all hunters in the neighborhood of $4,500. It is self-evident that local communities in the neighborhood of the Forest derived a considerable income as a result of this special deer hunt. - R.-4 Bulletin

MUSTN'T USE THE NAUGHTY WORDS

Dear Sirs:

This is just to tell you that I usually enjoy all features of the Forest Rangers on the Farm and Home hour, and I think it is a fine contribution to our air programs.

But it is disappointing to have such a good program thrust words like cock-eyed, doggone, deuce, and heck at us. The English language is rich enough without such words. Let the merit of your programs be in the cleverness and clean wit and humor and not in words that are not quite in good taste.

Kindest regards,
G. G.

MONTHLY WEATHER REVIEW PRINTS FINDINGS OF STORM RESEARCH WORK

"Pressure Distribution in Relation to Thunderstorm Occurrence on Oregon and Washington National Forests", written by R. A. Ward while he was employed at the Pacific Northwest Forest Experiment Station and published in the February 1936 issue of the Monthly Weather Review, describes three types of atmospheric pressure distribution that give rise to the thunderstorms in the Pacific Northwest which cause 50 percent of the fires on the National Forests. This study should be of considerable aid in the problem of localizing and intensifying the fire weather forecasts so important in this area. - Pacific Northwest For. Expt. Sta.

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SERVICE BULLETIN

CONTENTS CONFIDENTIAL

> WE ARE COMING TO RECOGNIZE AS NEVER BEFORE THE RIGHT OF THE NATION TO GUARD ITS OWN FUTURE IN THE ESSENTIAL MATTER OF NATURAL RESOURCES. IN THE PAST WE HAVE ADMITTED THE RIGHT OF THE INDIVIDUAL TO INJURE THE FUTURE OF THE REPUBLIC FOR ITS OWN PRESENT PROFIT xxx THE TIME HAS COME FOR A CHANGE. AS A PEOPLE WE HAVE THE RIGHT AND THE DUTY xx TO PROTECT OURSELVES AND OUR CHILDREN AGAINST THE WASTEFUL DEVELOPMENT OF OUR NATIONAL RESOURCES, WHETHER THAT WASTE IS CAUSED BY THE ACTUAL DESTRUCTION OF SUCH RESOURCES OR BY MAKING THEM IMPOSSIBLE OF DEVELOPMENT HEREAFTER
>
> Theodore Roosevelt

Vol. XX No. 25 Washington, D. C. December 7, 1936

THE RANGE PLANT HANDBOOK

By Daytonius, Washington

The Forest Service looseleaf range plant handbook (which left Research for printing a year ago last September) having now reached the page-proof stage, it seems opportune for our house organ to pull out a diapason, and prelude the book's issuance from press. It will be something distinctly "different" in Forest Service literature.

When the "handbook crew" -- of whom more later -- assembled in Washington they drew up a list of 512 key genera and species but, after the precedent of the boy who "bit off more'n he could swaller," this roster was later cut and a priority list established. Actually, the range plant handbook consists of 339 separate write-ups, 58 generic and 281 specific, covering 31 genera of grasses, 4 genera of grasslike plants, 97 genera of range weeds, and 66 browse genera. These 339 write-ups, however, include brief notes, ranging from a few words to several paragraphs, on 651 other range plant species so that the book contains notes of some sort on 932 species of western range plants.

The write-ups are not paged, but are designated by symbols (G1, G2, etc., for grasses; GL1, GL2, for grasslike plants; W1, W2, for weeds; B1, B2, for browse). Gaps are provided in the sequences for the possible later inclusion of other genera and species shown on the original list. The size of the printed part of each page is standard bulletin size, 4⅜ x 7⅜ in., but the page itself is smaller, being 5¼ x 8 in. The looseleaf copies of the handbook will appear in a black fabrikoid strap binder, with the title and Forest Service seal, in gilt, on the back and front.

The book contains 294 illustrations, mostly original, including 239 zinc etchings, 37 half-tones, and 18 lithographs. A novel feature is the lining up of the simple botanical descriptions of the key characters with the appropriate parts of the illustration, so that they can be used by persons without botanical training. These illustrations, it is believed, will "steal the show," and too much praise cannot be given our crew of artists: Miss Leta W. Hughey, Miss Elnor L. Keplinger, Miss Elda Walker, Miss Margaret B. Austin, Mrs. H. Dreja, Mr. Harold W. Sentiff, and Mrs. E. L. Pomeroy. In addition, 38 drawings by the late Mrs. Annie E. Hoyle were used, as well as 2 by Miss Blanche A. Batts, and one each by Mrs. N. Brenizer and Mr. Charles L. Taylor. Thirty-five Forest Service photographs were used, chiefly taken by Dr. A. W. Sampson, the late Mr. D. C. Ingram, and by Messrs. M. W. Talbot, Ernest L. Crandall, E. P. Cliff, Charles A. Kutzleb, L. S. Bailey, A. H. Carhart, and J. T. Jardine.

Two plant paintings, made by Mrs. Lillian Hallock, of Portland, Oregon, were purchased for the handbook but these are in no whit superior to, if in fact the equals of, the 16 paintings made by our own artists.

As to the genesis of the handbook: From time to time wishful expressions came from Service field men for an accurate publication on key range plants, readily consultable under field conditions, in as simple language as possible, which could be assembled as desired and be easily revised. Probably the first request of this sort, in black-and-white, appeared in an article by Mr. John H. Hatton in the December 5, 1932, issue of "Management." On December 28, 1932, a conference was held in Mr. Loveridge's office, attended by Messrs. Chapline, Dayton, Hatton, Hill, Keplinger, Loveridge, and Roberts, and Miss Hayes. From this resulted the joint-memorandum of January 4, 1933, laying the general foundation for the whole project. A large measure of credit is due Mr. Loveridge, a godfather of the handbook, for crystallizing the necessary interest and moral and financial support to push the job to completion. When the swarm of buzzing editors, reviewers, and critics flew away from the Introduction to the handbook, with their demands for brevity, I was saddened to find that they had carried off, _inter alia_, earned bouquets to several of the gentlemen named.

As everyone knows who has tried it, the atmosphere of the typical Washington Office room is not especially conducive to the concentration necessary for technical book writing. A sort of adaptation of the mass-production idea was, therefore, applied to the manufacture of the handbook. Arrangements were made, largely under the direction of Mr. Robert R. Hill, now Chief of Range and Wildlife Management in Region 9, to detail to Washington an outstanding technically trained range man from each of the six western range regions. This method was adopted primarily to speed production; very important secondary considerations were to bring varied field knowledge and experience into play as much as possible, and also to help in the training of promising men. The following field administrative men were, accordingly, detailed to Washington from December, 1933, to February-March, 1934: Mr. Thomas Lommasson (R-1), Mr. Charles A. Kutzleb (R-2), Mr. Odell Julander (R-3), Mr. Arnold R. Standing (R-4), Mr. Lloyd W. Swift (R-5), and Mr. Edward P. Cliff (R-6). This group was again detailed, to finish the job, in the winter of 1934-5, except that Messrs. Lommasson and Standing, whom their regions could no longer spare, were replaced, respectively, by Messrs. Barry C. Park and (the only non-administrative man of the group) Selar S. Hutchings of the Intermountain Station.

Mr. Kutzleb prepared 79 write-ups, of which 22 (28%) were grasses and 33 (42%) range weeds. He was on detail the longest and gave material assistance in the technical editing of other write-ups, in preparation of the index, in proof-reading, etc. Mr. Julander produced 61 write-ups, largely of Southwestern plants; he was our leading agrostologist, 39 (64%) of his write-ups being grasses. Mr. Cliff prepared 53 write-ups, largely Northwestern plants and umbellifers. Mr. Swift produced 46 write-ups, chiefly browse (30, or 65%), Californian grasslike, and ericaceous plants. Mr. Lommasson initiated 28 write-ups, but his detail was the shortest of all, and 15 of these were later amplified by Messrs. Park and Kutzleb. Mr. Lommasson specialized in weeds, and 7 (25%) of his write-ups are on larkspurs and geraniums. Mr. Standing prepared or started 25 write-ups, his all-too-brief detail not permitting him to finish some of them. Sixteen (64%) of Mr. Standing's write-ups were in the genera _Bromus_, _Cercocarpus_, _Chrysothamnus_, _Festuca_, and _Polemonium_. Mr. Hutchings prepared or started 25 write-ups, besides finishing 5 of Mr. Standing's. Eighteen (72%) of his write-ups were in the genera _Artemisia_, _Asclepias_, _Astragalus_, _Festuca_, _Gutierrezia_, _Poa_, and _Sambucus_. Besides carrying on 15 of Mr. Lommasson's unfinished write-ups, Mr. Park produced 22 of his own, 6 of which were completed later by Mr. Kutzleb. Half of Mr. Park's write-ups were in the genera _Mertensia_, _Senecio_, _Trifolium_, and _Zygadenus_ and, with one exception, the rest were also weeds.

(To be continued)

FOREST PRODUCTS LABORATORY IN "RESEARCH PARADE"

Recent work of the Forest Products Laboratory in the chemistry of lignin and the development of wood plastics was featured in the "Research Parade," a scientific display held November 23 in the auditorium of the National Academy of Sciences, Washington, as part of the centennial celebration of the United States Patent Office. C. P. Winslow and Earl Sherrard conducted the Laboratory's exhibit.

Combining techniques of stage, movies, and radio, the "Research Parade" consisted of dramatic presentations of ten selected examples of "science achievements of today that may be applied to industry, home, or health tomorrow." The Forest Products Laboratory, the National Bureau of Standards, and the Smithsonian Institution were the only Federal organizations included in this "parade." Other exhibitors were the General Electric Co., demonstrating direct current transmission; the Westinghouse Company, polarized light; Johns Hopkins University, high frequency sound; RCA-Victor, electron image tube; du Pont, synthetic rubber; Corning Glass Co., glass technology. The Smithsonian Institution was represented by Dr. C. G. Abbot, demonstrating the solar power engine.

Presentations by the Forest Products Laboratory were a motion film showing late advances in the chemistry of lignin, the dark and difficult component of wood which has for a century resisted complete organic analysis, followed by actual demonstrations of specimens of the new plastic developed by the Forest Products Laboratory from waste wood through a lignin reaction. The strength, hardness, and water resistance of the plastic were shown, together with varied surface treatments adapting it to use for wall boards, panels, table tops, and other manufactures.

These and other developments in wood chemistry were also broadcast by Mr. Winslow over the Columbia network on November 24.

The committee sponsoring the Patent Office centennial was headed by Charles F. Kettering, vice president of General Motors Corporation, and included the presidents of national engineering societies and leading industrialists throughout the United States. - Forest Products Laboratory

A FRENCH FORESTER LOOKS AT SAN DIMAS

By E. L. Hamilton, California For. Expt. Sta.

Mr. Albert Magnein, Inspector General and head of the French Department of Forests and Waters has been visiting officially in the United States since the Up-Stream Engineering Congress in Washington. Among other places, he visited California, and, of course, had to see the San Dimas Experimental Forest near Los Angeles.

Mr. Magnein was met in Los Angeles by Storey and myself the morning of October 4, and I had the pleasure of acting with Bachigalupi as interpreter during Mr. Magnein's two-day stay here. We visited first the new Verdugo Wash storm drain and the debris basin near Briggs Terrace. Mr. Magnein expressed surprise at the concrete construction of the drain and commented on the expense necessary to clean out the debris basin. He mentioned that in view of the steep mountain slopes it was no wonder that there had been floods, property damage, and loss of life following fire. He asked if reforestation was being carried on and was greatly interested in learning about the mustard sowing following destructive fires.

Lack of time prevented a visit to the new County Flood Control dam in San Gabriel Canyon, but Mr. Magnein seemed to take dams as a matter of course.

His reaction to our road slope erosion control was that it was necessary of course, and he commented on the fire hazard from the grain. Inspector Magnein seemed especially interested in firebreaks and asked innumerable questions as to their size, methods of locations, efficacy, maintenance, contribution to erosion, and cost.

The Inspector General took it as a matter of course that we had a naturalist and expressed much interest in the Biological collection. The instrument room and the soils laboratory were beyond him. He was quite pleased with the general use of wood in the buildings. The lysimeters seemed rather incomprehensible at first, but as the problem was explained he became more and more interested and was quite enthusiastic by the time we left them. He did not react at all to the instrumental details of either run-off plots or lysimeters, but the basic ideas involved pleased him very much.

The Bell Watersheds evoked much interest. The rainfall studies left him cold, but the revolutionary idea of foresters burning over a large piece of country to find out what happened rather grew on him. He was rather bewildered by the complexity of the various stream gaging installations, but climbed up and over everything and became more and more pleased as he comprehended the workings of the installation.

We took the ridge road to Sunset Peak and then to a point overlooking the Fern Watersheds and Run-off Plots. Mr. Magnein seemed to take the climatic studies as a matter of course, but was quite amazed at the detail to which we are going.

We visited the San Antonio Water Spreading area, and it took all the syntax I knew, as well as both hands to explain them, but as he caught on he became more and more delighted and I believe that this was one of the highlights of his trip.

We finished up with the big flume in San Dimas Canyon, the fire protection pipe line and tank system there and the test flume below the San Dimas dam. He seemed quite surprised at the idea of foresters conducting hydraulic experiments but agreed that the results justified the work.

As we left the Experimental Forest the Inspector said, "We have nothing at all like this in France. There is but one Forest Experiment Station where research is carried on, namely that at the National Forest School at Nancy. Very little research is carried on in the field. If a field officer insists enough, someone from Nancy will go out and take a few tree measurements or some light intensity readings but that is all." He said several times "Ah! but you are marvelously equipped." Mr. Magnein inquired about the number of Forest Experiment Stations in the United States and their branches. He stated also that from the character of the vegetation and the slopes and the climate he might think he was in Provence or the Midi.

MEASURING THE RESULTS OF TRAINING

It is difficult to check the results of approved training methods with actual figures. A recent instance of a fifty percent increase in efficiency on the Shelterbelt as a result of the application of proper training methods led to a similar study on the Upper Michigan National Forest in Region 9.

The reporting officers found it difficult to reduce the training accomplishments to figures; also, it was impossible for them to indicate how much of the improvement resulted from training and how much from practice and hardening to the work. They queried:

"A planting crew may plant 200 trees the first day, 300 the second, 400 the third, etc. and by the end of the first week be planting 700 trees a day. The last week of the season the crew may be planting 1100 trees a day. How much of this improvement is attributable to practice? How much to toughening of the muscles? How much to training? When does one begin to measure the quantitative improvements — from the first day, from the second, or from an average of the first week as against an average for the last week?

"When you come right down to it, is it conceivable that a crew could plant at all without some kind of training? There is not apt to be available an example of production under conditions where there has been no training as against production under conditions where there has been training, because it is impossible to put a crew to work without giving some instruction, which is, of course, training."

Facing these problems and lacking objective tests, the field men nevertheless present these concrete examples of training accomplishments:

EXAMPLES OF TRAINING	MEASURED RESULTS
Moran District: Enrollees were trained in the careful selection of trees in thinning dense stands of cedar where marking was impossible.	Before training, a crew of 14 men averaged 1/2 acre per day; after training, they averaged 3/4 acre per day.
Manistique District: A group of 50 enrollees were received during planting season. They were taken to the field and subjected to one week of purely training instructions.	On the first day each man planted 250 trees, the second day 300 trees, the third day 350 trees, the fourth day 400 trees, and the fifth day 500 trees. By the end of the two weeks period each man in the crew was planting approximately 1100 trees per man-day.
On timber stand improvement work, each man at first is thoroughly trained in the proper use of an axe so he may efficiently use this tool. Second, he is trained to do the type of cutting necessary.	It appeared that in approximately two weeks the production per man-day doubled.
Rapid River District: In 1935 planting season, all enrollees were inexperienced. An intensive period of training in the technique of planting was given in the first days of the season.	At the beginning of the season the men planted 420 trees per man-day. At the close of the season they planted 810 trees per man-day.
Raco District: One week intensive instructions in planting technique.	First week 465 trees, second week 525 trees per man-day.
Twelve inexperienced enrollees were brought into the central repair shop, placed under the training of regular mechanics, and given instructions in fundamentals of auto mechanics. Training continued over a period of three months. Of late very little supervisory attention is being given to the minor jobs assigned.	Trucks are moving in and out of the repair shop from three to four times as fast as normally.

Results of training were apparent in the following examples but were not readily measurable.

EXAMPLES OF TRAINING	RESULTS APPARENT BUT NOT MEASURED
Munising District: The entire camp, including the foremen, was divided into small groups during the early fire season and trained in the suppression of forest fires. A mock fire was outlined with string in a	Reaction to this training was evident on calls to actual fires later in the summer. The enrollees were anxious to apply their newly acquired knowledge on a real fire, and responded in a very satisfactory manner

bad slash area near camp. A separate fire was laid out for each crew. The crews, groups of 25, were taken to the fires. On arriving at each fire, it was explained why forest fires must be suppressed while small. The head of the fire was shown and the crew was taught how such a fire should be attacked under various conditions. Equipped with adequate tools, each crew then knocked down the fire, trenched it, and mopped up.	to the fire siren. A fair estimate of their increased efficiency would be about 60 percent.
Manistique District: Intensive daily training in the technique of the job.	Enrollee machine operator received appointment as ECW tractor operator due to training received. Another enrollee received appointment as ECW machine operator. A third man, through his training in leadership and in technical phases of the work, received appointment as ECW squad foreman of laborers.
Raco District: Intensive training in the skills involved in office work.	Junior enrollees advanced from CCC clerks to temporary ranger clerks and finally to regular emergency appointments. Some went into private business offices as the result of training received in Ranger or CCC offices.

LAND PURCHASES UNDER RESETTLEMENT ADMINISTRATION

Options have been closed on more than 9,000,000 acres of land in 44 States by the Resettlement Administration. This acreage represents all but a few scattered tracts which will be included in the nation-wide land utilization program. The optioned acreage involves an expenditure of $39,916,603, or an average of $4.40 an acre. Practically all optioned land is unsuited to crop production and cannot support human subsistence. It is being restored to grazing, forestry, recreation, and other uses for which it is naturally fitted.

The Resettlement Administration's acquisition represents less than one tenth of all the poor farmland suggested for public purchase by land experts. There are 5,746 families remaining on this purchased land which will need aid in resettling. More than 2,000 have already been moved. Altogether there are 210 land acquisition projects. On 141 of these, development work is going forward under a separate program, having given employment to 55,000 men largely from relief rolls.

Approximately three fourths of the land is being restored to some kind of use, such as forestry, grazing, or a combination of these or other uses as dictated by the nature of the land and the needs of the community. Forty-six recreational projects are being turned over to the National Park Service for completion. Wildlife conservation, including migratory waterfowl refuges planned in cooperation with the Bureau of Biological Survey, and Indian Rehabilitation, under supervision of the Department of the Interior, are being carried on in 63 projects. The largest project is Milk River Land in northeast Montana, in the dry land area. It comprises 900,000 acres to be developed as grass ranges.

In the western plains, scene of the worst effects of the drought, the purchase of land is being undertaken to establish controlled public grazing areas. Equally important features of the rehabilitation of this area are the construction of small dams and reservoirs to conserve water and resettlement of some farmers on larger holdings or on irrigated tracts. - Resettlement Administration News Release.

YE EDITOR DISCOVERS

The 1936-37 edition of "Who's Who in America" contains some 62 names of foresters and forest officials. Due to death, the name of Dr. Austin Cary has been omitted, but five new names are included -- Earle H. Clapp, Walter C. Lowdermilk, John D. Guthrie, E. T. Allen, and George W. Peavy.

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More than 200 colleges and universities throughout the United States are cooperating directly with Civilian Conservation Corps authorities in making effective the CCC educational program for enrollees, according to a recent press release issued by the office of Robert Fechner, Director of Emergency Conservation Work.

The types of assistance which colleges and universities are extending the corps include correspondence courses, lectures, use of classrooms and laboratories, use of instructors, library facilities, and scholarships.

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Pondering fitfully in its mahogany-lined sanctum on November 7, the Advisory Committee of the U. S. Board of Geographical Names settled for all time the question: When is an island an island? Out of the smoke there emerged a unanimous (14 page?) decision to recognize local usage whenever the names of features, by reason of physical change, are no longer what the name implies.

Potent in influencing the discussion was the fact that local usage continues to use old names in cases where islands have been attached to the shore by natural or artificial deposition of earth, or where lakes have been drained and are now perhaps being used for farming. You can't change local usage. That is what the Board thought too.

When one member, dissenting, said that when something is a peninsula, it ceases to be an island and is, in fact as well as in law, a peninsula -- he was overruled, ten to one. His ideas concerning peninsulas didn't count. The decision was a big victory for the old folks, but a blow to fussy fact sticklers.

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After having recently sent copies of "Possibilities of Shelterbelt Planting in the Plains Region" to England, Spain, Germany, and Greece, a copy was mailed by the Washington Office of State and Private Forestry to Mr. R. W. Littlewood, Principal, Agricultural College and Research Institute, Coimbatore, India.

Just how far away this is, is indicated by the fact that his letter of October 27 was received by the Forest Service on November 21. His copy of the Shelterbelt Booklet will be just in time for delivery at destination by Santa Claus.

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"Agricultural Statistics, 1936", a 420-page volume containing the statistics formerly included in the annual Yearbook of Agriculture, is now off the press. Tables of special interest to members of the Service will be found on pages 295, and 373 - 387.

The volume is designed, as were the statistical sections of the Yearbook, as a convenient reference book for farmers, businessmen, editors, school and college students. It can be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 50 cents a copy.

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More than 10,000 dogwood seedlings have been ordered from the State Forester at Jackson, Mississippi, for winter planting in the Forestry Commission's "Plant Dogwood – Beautify Roadsides at a Profit" project, according to a recent news release issued by the Commission. Orders have come in from large and small landowners, educational institutions, and civic organizations.

The outlined project calls for dogwood planting, for the improvement of roadsides and public properties and to replenish the dogwood species – in high commercial demand for spindles, shuttle blocks, spools, bobbins, handles, mauls, and wedges. The State Forestry Commission has prepared for distribution to purchasers a leaflet giving planting instructions and other information.

FOREST SERVICE EMPLOYMENT

October, 1936

Classification	Number	Appropriation
ECW Enrollees	164,328*	Paid from ECW Emergency Funds
Supervisory & Facilitating Personnel	11,802	do
ERA Relief Rollers	23,609	Paid from 1935 and 1936 ERA Act Funds
ERA Supervisory	2,227**	do
Fire Fighters (not relief) 88 hours or more per month	1,077	Paid from other than Emergency Funds
Emergency Fire Guards	521	do
Regular Seasonal Fire Guards, 6 weeks to 3 months	677	Regular Appropriations
Regular appointed personnel	3,329	do
Total............	207,570	

*The 164,328 includes 142,878 enrollees based on September reports plus additional anticipated enrollment of 21,450 authorized for October.

**Of this number, 387 are administrative employees and 63 are exemptees.

MAYOR OF COQUILLE EXPRESSES APPRECIATION

Mr. C. J. Buck,
Regional Forester,
Portland, Oregon.

Dear Mr. Buck:

On behalf of the City of Coquille, I want to thank you for the splendid cooperation of your department with the officials of our city and of this community in the recent fire danger in this district.

There is no doubt that the work done through your department did away with any further danger of a conflagration, and was certainly appreciated by the people of this community.

Respectfully yours,
(signed) J. Arthur Berg
Mayor

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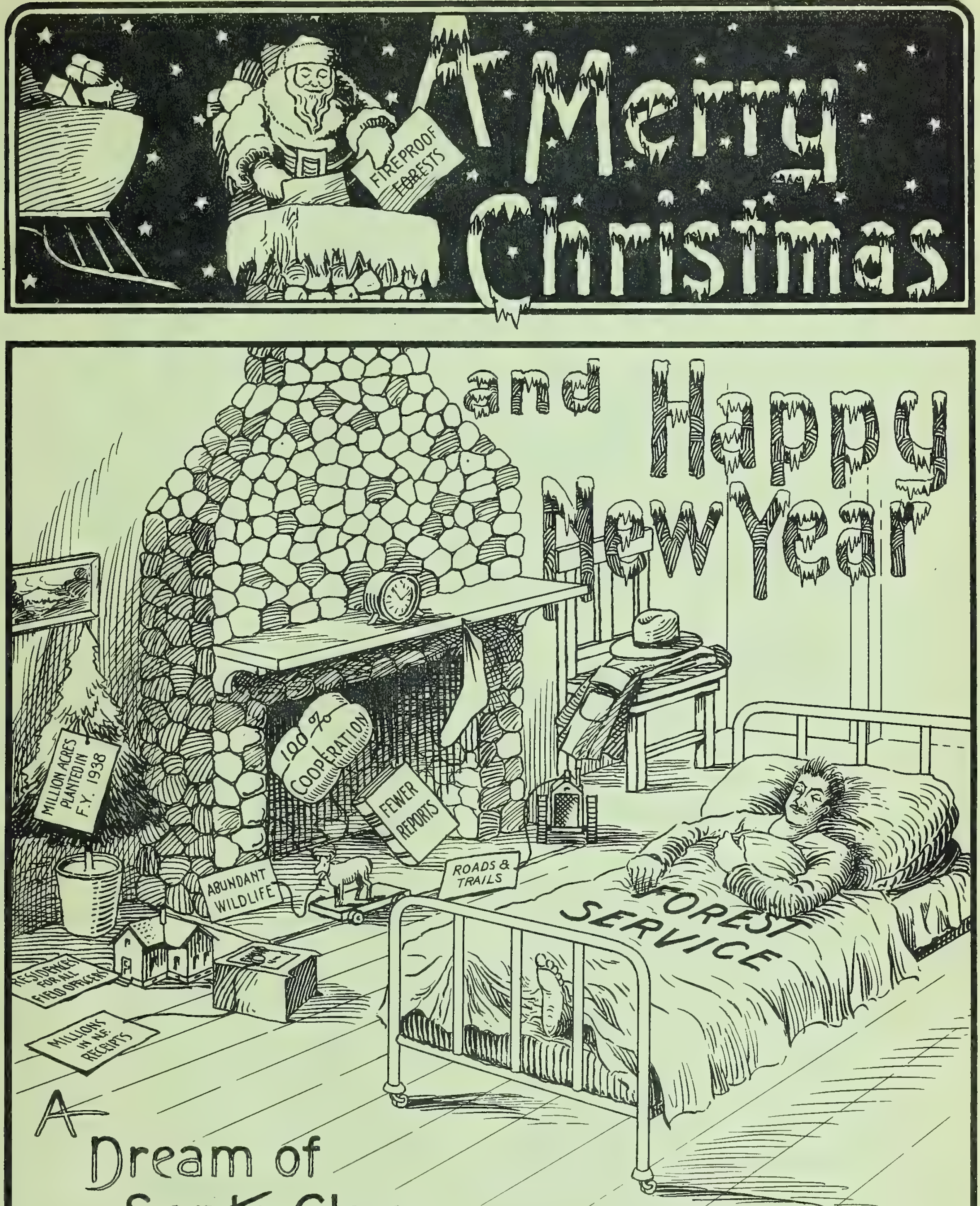
A Merry Christmas
FIREPROOF FORESTS
and Happy New Year
MILLION ACRES PLANTED IN F.Y. 1938
100% COOPERATION
FEWER REPORTS
ABUNDANT WILDLIFE
ROADS & TRAILS
RESIDENCES FOR ALL FIELD OFFICERS
MILLIONS IN N.F. RECEIPTS
FOREST SERVICE
A Dream of Santa Claus

SERVICE BULLETIN

Vol.XX No. 26 Washington, D. C. December 21, 1936

DEMOCRACY AND SCIENCE

At no time in the history of the world do the blessings of democracy stand out as clearly as at present. We who are privileged to live and work in that greatest of all democracies -- the United States -- are most fortunate indeed.

While elsewhere democracies crumble and free institutions perish beneath the heels of dictators, our rights and liberties as free men become ever more precious.

On the eve of Christmas, recalling other times and other places where men were martyred and crucified for humanity, it is appropriate that we rededicate ourselves to democratic ideals and to the defense of human rights.

Only in free democratic countries can science and truth exist. Under dictatorship free inquiry and independent thinking perish.

May, then, our Forest Service which, from birth, has been permeated with the spirit of public service, equality among all its members, and courageous seeking after truth and knowledge, remain forever the guardian and militant defender of the ideals of a free people.

F. A. SILCOX

FORESTS HAVE FUNCTIONS OTHER THAN TIMBER PRODUCTION

By L. F. Kneipp

Almost since the date of its birth, the Forest Service has had to combat the charge of many groups and elements that it is materialistic and mercenary. It came into being at the height of an era in which the dollar sign dominated all other considerations and when decision as to whether it should be allowed to live and grow hinged largely on whether it could pay its way. Its functions lay generally in economic communities predicated largely or wholly on the transmutation of natural resources into industrial values, where a disruption of that process meant disruption of the social and political structure. Viewing the situation pragmatically, the Service conformed to these criteria pending the time it could contribute to their reformation, as an alternative preferable to dissolution or frustration. Then, at the beginning of the emergency of four years ago, the Service found itself charged with responsibility for money, machinery, and men in numbers staggering the imagination, and for so employing these resources as to produce measurable results, obvious, acceptable, and satisfying to the American people. Naturally, it turned to fields of accomplishment productive of such results; which is to say that it constructed highways, roads, trails, bridges, telephone lines, lookout towers, campgrounds, and administrative structures; planted burns, improved existing timber stands, eradicated noxious elements, and otherwise converted economic and human energies into forms expressible in terms of miles, acres, and other units.

The record is entirely sound and justifiable; nevertheless it does carry the danger of a widely prevalent opinion that only the material and measurable accomplishments are to be regarded as worth while; the hazard that the members of the Service may tend to attach minor importance to the spiritual values of forests and forestry. Nothing would be more regrettable, or more apt to impair the prestige and power of the Service. Nor would anything do more to deprive the American people of the full measure of service and value from their forests. For the spiritual contributions of the forests to the fullness and richness of American life are major attributes of their proper place in the national scheme of things, and their impairment would be a serious blow to the future of forestry.

There is a possibility that the soundness of this premise is more generally recognized by the American people than it is by foresters. There was a time when the importance of forests was measured by their provision of materials and energy, but science has profoundly changed that condition. Other types or forms of materials or energy now compete with those afforded by forests. The man on the street is no longer alarmed by the thought that forest destruction will deprive him of building material or fuel. But he is becoming increasingly alarmed by the thought that it may deprive him of opportunity for the most desired use of his leisure time, or of the most satisfying contacts with natural forces, or of the environmental conditions most conducive to his peace and happiness; or may disrupt the complex which contributes most fully to individual, community, and national welfare. A tree as a living organism, as a phenomenon of nature, as an element of landscape beauty, may contribute much more to his well-being than if converted into boards or pulp or cordwood; and he may oppose such conversion with a truly fanatical spirit.

To this premise, the old Greek axiom "nothing in excess", of course, has full application. Trees can and should serve an infinite array of utilitarian purposes. But in planning the destiny of trees the true forester will keep fully in mind their spiritual as well as their material values. Human use of trees in the future will go far beyond their conversion into boards or poles or piling or cordwood. The best Christmas gift a forester could give the American people is a pledge that in the conduct of his professional activities he will safeguard their spiritual interests in the forests as fully as their material interests.

THE SECOND AND THIRD GENERATIONS

By C. M. Granger

One critic of Santayana's book "The Last Puritan" said that it took the author six hundred pages just to say that he does not like Boston! No doubt any author could easily fill six hundred pages with reasons why he is in favor of Christmas. I shall try to be somewhat more brief. In fact, I shall not mention the matter at all!

What I want to do is to direct special Christmas greetings to a group in the Forest Service family which is growing up among us with astonishing rapidity and "numerosity." I refer to the second and third generation of Forest Servicers. There are scads of tots at the various Forest Service Christmas parties throughout the land. A surprising lot of them are of the third generation - grandchildren of those with whom we served as youths only what seems a few short years ago. The still youthful-looking Bill Greeley can be diverted any time from a discussion of Douglas fir problems to a symposium on his grandchildren. Fred Morrell goes home to change into his golf pants and finds his granddaughter napping on his bed. And one often now meets sons and daughters of old associates in various Forest Service jobs from Washington to the Golden Gate. It is a fine thing to see, and Christmas is a fine time to cheer about it.

The writer, on occasions of his written tributes to the women of the Forest Service, has been accused (by the males) of merely trying to talk himself into chicken dinners. At least no such ulterior motives can be ascribed to this special recognition of the second and third generation in extending Christmas and New Year greetings to Forest Servicers of all sizes and ages.

WHERE WE STAND

By E. W. Tinker

At the end of the year, it is customary to take stock and make an inventory. The Forest Service and all the men in the Service might well do likewise.

"Time Marches On" and with the march of time public policies and attitudes change. Organizations either lead, keep abreast, or fall behind. Economic stresses and strains during recent years have accelerated tremendously changes in our economic and political structures, as well as public thinking. Has the Forest Service, as an organization, kept abreast of these changes?

We have thus far maintained an impregnable defense in our administration of the National Forests. We have maintained and in fact advanced our position in forest research. But what of other provinces of national concern wherein forestry should play an outstanding part?

What of soil conservation and erosion control? What of streamflow and flood control? What of farm forestry as related to the vast area of farm woodlots? What of the commercial timberlands and the maintenance of their productivity and the establishment of sustained yield locally and regionally? What of a short-haul economy for the benefit of the consumer? In all of these things the Forest Service has a responsibility to the public. They are inter-related and except for soil conservation and erosion control, practically an untouched field.

If the Forest Service is to show real leadership in the public welfare, it must recognize the relative importance of these problems as compared with its traditional undertakings. Painful as it may be, it must step out of well-worn and clearly marked paths and courageously bring to public attention unsatisfactory situations and remedies for them. The alternative, in this day and age, will be a gradual retreat into the background of public affairs.

With the initiation of the new year, it might be well to broaden the scope of our thinking and as public employees consider the forestry problem of the Nation in all its aspects rather than from the aspect of the things over which we can maintain direct control.

PAY CHECK CHEER

By H. I. Loving

Along with Christmas and the close of the year comes the natural tendency to recast the accomplishments of the year. Practically no one in the Forest Service can consider the past year without realizing the vast reach of forestry endeavor and the tremendous amount of detail and instruction that it has been necessary for the men and women of the Service to master.

In every movement, large or small, there are those whose primary duty it is to pay the bills. This activity, while it follows the general project is yet one of the most essential elements; since, unless the bills are paid, the whole project will come to disrepute and ultimate failure.

The Washington Office recognizes the heavy load placed upon those who have maintained the fiscal records; we also recognize the difficulty resulting from having to deal with three independent disbursing units, operating under varying rules and with little understanding of our work requirements. Members of all offices are to be commended for seeing that salary and supply checks have gone forward regularly to individuals and firms to whom due. Prompt transmission of December checks will help bring Christmas cheer to a vast army of folks spread over the entire United States and its possessions.

No one can estimate the extent of the benefit derived by the Nation from forestry activities. To those throughout the Service who have worked long and well in paying our accounts, likewise to those engaged in other undertakings who have lent their cooperation, are our Christmas Greetings directed.

FROM "TOPS" TO BOTTOM

By Earl W. Loveridge

Good organization; smoothly, effectively attained results -- these are things we're making mighty efforts to achieve. And with gratifying success, too. A lot of the things we're working toward in personnel management and public relations, in finance and organization should help to bring happiness in this and future holiday seasons.

But organization and efficiency are far from being the whole story. Such things as morale, loyalty, esprit de corps, are essential parts of the make-up of any successful outfit. And just to show you that we have some of that, too, I'm passing on to you an unofficial - off the record - write-up about working for the Forest Service. Not mine; it was written by one of our CAF-2's. Here's a clerk's-eye view of our job, from "tops" to bottom -- and maybe she can give us all something to shoot at --

"So you're working for the Forest Service are you? I'll say, - and it's the most wonderful job in the world. Fella, you don't know what it is to fall in love with your work! You don't know the thrill of belonging to a fraternity of fine men and women working toward a common end -- not three days a week, three weeks a month, three months a year, but living the same principles and policies every second. You can't know what it is to work for something outside of gold, -- precious though that may be too! This job brings out the tender leaves of hope. No sir, I'm not dragging any more chains. Boy, I'm spreading my wings!

"It all checks up. Right down the line, the feelings are mutual.

"The CHIEF believes the Forest Service is immortal. Since Gifford Pinchot it has been motivated by broad and unselfish human service. It will be exactly what the personnel is -- silly with the stupid; frivolous with the playboy; frugal with the thrifty; lazy with the loafers; extravagant with the spendthrifts; industrious with workers. If -- and here's the point -- if we love our job, believe in it, trust it, and respect it -- wise leadership, not of supermen in high places, but rather of men who believe in the job, without thought of fame or power, will win public confidence and understanding.

"The REGIONAL FORESTER senses the true relationship of the Region to the kaleidoscopic pattern of the Nation. He exults that his work brings about a closer relationship between physical things -- the growth, production of trees -- and social values for his people.

"The FOREST SUPERVISOR lives in and for his community. He finds life better, and more of it, in smoky camps and backwoods crossroads than in the most luxurious hotels.

"The SUPPLY OFFICER remembers that it is better to give than to receive!

"The FOREST RANGER solving his problems in the woods loves his work. His wife loves it. It's got into their blood. Once a Forest Service man, always a Forest Service man. She is a Forest Service woman. Their children are Forest Service children. Content or discontent with the job makes or breaks your work in the Service. He's content. She's content. They've turned on everything.

"The FOREST CLERK doesn't rationalize his sensation of whole-souled love for the Forest, the job, the whole outfit. It just hits you with a jolt, he says. You can get the same effect, says he, by casually stepping off the curb any day and being hit by a 25 ton truck. -- Only not so pleasant.

"The LOOKOUT perched in his tower, can see greater responsibilities, greater opportunities. As high as his perch is the standard of ethics of the Forest Service, and more extensive than the land he watches, which stretches over a tremendous area, as far as eye can see, are the responsibilities and opportunities of the brotherhood he has joined -- even on a short-term basis.

"The TYPIST in her humdrum atmosphere of routine matters faces eagerly and cheerfully the work ahead. The Forest Service Pied Piper has added her to his ardent followers. Chucking her gum to the other cheek, she says, 'This work is right up my alley, even though I still insist it's the seedling trees rather than the oversized timber which should be called virgin.'

"As the Ranger said when he woke and found a mama bear and her cub curled up near him, 'Just one big, happy family!'"

THE RANGE PLANT HANDBOOK

By Daytonius

(Con't. from December 7 issue)

It was originally intended to initial each write-up for authorship but, by the time the material was ready for press, this plan was found impracticable because so many people had made important contributions to the great majority of the write-ups. The "handbook crew" itself served as a board of review on each other's manuscript, and each write-up has benefited from this joint consideration. Mr. W. R. Chapline, Chief, Division of Range Research, had general oversight of the project, gave unstintingly of advice and suggestions from his rich experience, read the whole manuscript critically and made many highly important contributions to the text. Mr. Robert R. Hill, formerly Assistant Chief of Range Management, kept in close touch with the project throughout, was largely responsible -- as hitherto stated -- for the selection and detail of the field men, read the entire manuscript critically, and made many valuable suggestions. Miss Doris W. Hayes, Assistant Forest Ecologist, Division of Range Research, assisted the men along the more technical botanical lines, was chiefly responsible for the preparation of the picture-page plant descriptions, and for the general direction of the botanical artists. She also reviewed and made scientific revisions of manuscript, and contributed directly to the text. Dr. Miriam L. Bomhard, botanist, assisted in the technical revision of the manuscript for accuracy, an enormous labor which cannot be appreciated except by one who has done work of that sort himself. Much of the accuracy and adequacy of the botanical, ecological, and geographical details in the text is due to her efforts. She has made innumerable contributions to the handbook and is a joint-author of many of the discussions. Mr. Lincoln Ellison, of the Northern Rocky Mountain Forest and Range Experiment Station, assisted materially in the first detail of field men. His services, noteworthy for accuracy and fidelity to detail, were chiefly in connection with assembling information on all available plant photographs in the Forest Service negative and print collections, a laborious task; in a technical check for accuracy of many of the early write-ups; in assisting Miss Hayes with the picture-page botanical descriptions, and in various administrative matters.

Shortly prior to the second detail of men from the field the services were obtained of Mr. George H. Dacy, as English editor of the handbook. Mr. Dacy's wide experience as writer and editor, and felicity of style served to brighten and clarify the language of an oftentimes rather dry and obscure subject, and much of the readability which portions of the handbook may possess is properly attributable to his efforts. Mr. Dacy also did important service in the training of the individual men as writers, and his practical experience as a grower of livestock is reflected in the discussions of the cultivated forage species. Mr. Clark Hunn, Research Editor of the Forest Service, has given valuable advice and suggestions on a number of important editorial matters. Mrs. Theo Hartman (nee Campbell), assisted at times by Mr. James G. Conroy (now one of Washington, D. C.'s "finest"), served as bibliographer during the last year of the project, and checked all citations for accuracy. She also acted as fact-finder for the men on detail, ferreting out information on plants from various local libraries. Miss Keplinger, in addition to her plant drawings and paintings, prepared all the pictures for the printer, and helped on numerous other items.

It fell to the writer's lot to "ride herd" on the entire project; to give as much assistance and advice to the men on detail, both individually and collectively, as his time would permit; to be sure that each discussion was at once adequate, accurate, and clearly and concisely expressed; to watch for inconsistencies, especially in the economic notes; to furnish, from his own knowledge and experience, such additional information as was pertinent and desirable; in large part, to check the nomenclature and etymologies; to be finally responsible for the proof-reading and other details; to write the introduction and supervise the making of the index.

The Introduction to the handbook states the object, utility, and sources of the work, and elucidates its Latin nomenclature and method of indicating pronunciation. Especial attention was paid to the English plant nomenclature, and the elaborate index will also serve as a check list of range plant names. A number of names are published, it is believed, for the first time in the handbook, among them: Sprucetop grama for Bouteloua chondrosioides, buffalo bunchgrass for Festuca scabrella, ballhead sandwort for Arenaria congesta, aspen peavine for Lathyrus leucanthus, sawtooth butterweed for Senecio serra, and trailing blackberry for Rubus macropetalus. However, the recently issued Region 3 plant list has "stolen" three of our novelties, viz., cane beardgrass for Andropogon barbinodis, soaptree yucca for Yucca elata, and Mr. Kutzleb's admirable invention "goldeneye" for the genus Viguiera.

The full story of the range plant handbook must remain for some future Bancroft, Gibbon or Green of the Service. Lights, high, low, soft, and side, were plentiful! Offhand, two memories I shall not soon forget are: (1) The dignified Mr. Tom Lommasson seated in the "Annex" behind (for lack of suitable furniture) a horizontal door supported on two upturned wastebaskets; (2) a forenoon largely spent in dissuading a rather irate associate from tendering his resignation! However, with mighty few exceptions, our handbook family life was a really happy one, replete with pleasant associations, and I am confident we all parted the best of friends and well-wishers. Inescapable occasional trifles of friction seem now, in perspective, to warrant only a smile and worthy of recollection only in that sense -- as Virgil puts it, "forsan et haec olim meminisse juvabit."

UNIQUE MEMORIAL FOR FOREST SCIENTIST

A memorial to the memory of the late William Willard Ashe, long a member of the Forest Service, was erected in the De Soto National Forest, at the recent dedication of the W. W. Ashe Forest Nursery at Brooklyn, Mississippi.

The 12-foot stump of a cypress tree 18 inches in diameter was set in the nursery grounds. In one face of this durable log was placed a bronze plate with the name William Willard Ashe, drendologist, botanist, and forester, with the dates of his birth and death. E. E. Carter, Chief of the Division of Timber Management, spoke briefly on the life and character of Ashe. He placed upon the supervisor the duty of employing the same technical skill, thorough mental honesty, and willingness to accept responsibility, which characterized the life and work of William Willard Ashe. Congressman William M. Colmer urged the people to cooperate with the Forest Service in the work of restoring the forest wealth of Mississippi, especially by preventing forest fires.

William Willard Ashe came of a family for which Asheville, North Carolina, was named. One of the early American graduates in forestry, he served his native State in its forestry department and then entered the U. S. Forest Service in 1905. He made the first commercial plantings of longleaf pine and pioneered improved methods of lumbering and turpentining in use today.

Ashe had a hobby as well as a profession. He wished to know all the species of trees in the forests and farm woodlands of the Southeastern United States. He made special studies of the hawthorns, hickories, and basswoods, and described over 100 species previously unknown to science. A thorough scientist himself, Ashe believed that scientific research holds the key to the advancement of forestry and the conservation of natural resources.

The Ashe National Forest Nursery, one of the largest in the South, was started in December, 1935, to supply young trees for the De Soto National Forest in Mississippi, other National Forest lands in the South, and for erosion-control work. This year's crop of 30,000,000 seedlings will begin to move in December, when a three-months planting season in this section of the South begins.

CHRISTMAS TREES IN THE HOME NEED NOT BECOME A NUISANCE

Christmas trees in millions of American homes now shed needles all over the carpet, driving harassed housewives to "never-again" vows - which they will certainly break next year, because the children must always have their tree. Chistmas trees need not become such a nuisance, Dr. R. H. Carr, of Purdue University, reported. There are chemical means of preventing it. Dr. Carr has kept Christmas trees alive and in full glory of glossy needles and piney odor for as long as two months, by setting the cut ends of their trunks in solutions of certain organic calcium salts. Some other plant parts, like lilac flowers, have been kept in place for a whole year, but the flowers lost their color. - Science, February 14, 1936.

CHRISTMAS -- IN 1999

By C. E. Randall
(Reprinted)

'Twas the night before Christmas, and all through the Forest Service, not a creature had been stirring, although everyone was nervous. For Santa Claus had promised that if all the boys were good, he'd remember them with presents from his pack-sack, so he would. Of a sudden came a stirring, like the patter of the rain, and Santa Claus was landing with his helicopter plane.

"Well," said jolly old Kris Kringle, with a hearty, laughing snort, "how's the forest work progressing? Let's now have this year's report."

"The forests of the Nation," said the Forest Service Chief, "are in fairly good condition, it is my sincere belief. The current year's production, so says our balance sheet, reached an estimated total of a billion billion feet. All the slash has been disposed of with our new electric raker. We increased our range capacity to three hundred head per acre. Our able Branch of Research has increased the rate of growing so that trees may now reach cutting size just three years after sowing. Our Lab has found a process whereby all our needed food and clothing and utensils can be made from surplus wood. Our watershed conditions we now regulate at will; and by causing faster tree growth, pull the floods back up the hill."

"But are all the lands producing?" old Santa broke in, panting.

"Well, three acres in Chicago are still in need of planting."

"And how about the public? Are relations up to par?"

"Well," the Chief said, "broadly speaking, it is safe to say they are. All required legislation was unanimously passed; and our latest man-caused fire was the year before the last. We met some slight dissension when we advanced the notion that all smoking be abolished unless done in mid-ocean. Our forests now are playgrounds for the entire population. Yes, I believe it can be stated we get fair cooperation."

"Very good," said Santa, chuckling, "it is easy to be seen, that you all deserve your present - a new forestry machine. If you ever need a forest, press the button on the right, and you'll find this new contraption grows one for you over night."

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